

A revision of *Atherimorpha* White, 1915 from southern Africa (Diptera: Rhagionidae)¹

by

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ABSTRACT

Four named species of *Atherimorpha* have hitherto been recorded from southern Africa. In this paper, a total of 97 specimens (93 ♂, 4 ♀) are examined and 8 new species described (*angustifrons*, *crassitibia*, *flavicorpus*, *gracilipennis*, *irwini*, *longicornu*, *ornata*, and *stuckenbergi*). The southern African *Atherimorpha* fauna is still relatively poorly known.

INTRODUCTION

In southern Africa the genus *Atherimorpha* has been represented by four named species, that is, *albipennis* Bezzi, 1926 (based on 1 ♂ 1 ♀), *bevisi* Stuckenberg, 1956a (7 ♂), *latipennis* Stuckenberg, 1956a (1 ♂) and *mensaemontis* Stuckenberg, 1961 (24 ♂ 1 ♀), and four species merely called A, B, C & D by Stuckenberg, 1956a, 1961 (see also Stuckenberg 1980).

Eight new species of *Atherimorpha* are here added to the southern African fauna, viz. *angustifrons* sp. n. (2 ♂), *crassitibia* sp. n. (3 ♂), *flavicorpus* sp. n. (1 ♂), *gracilipennis* sp. n. (1 ♀), *irwini* sp. n. (1 ♂ 1 ♀), *longicornu* sp. n. (39 ♂), *ornata* sp. n. (22 ♂ 2 ♀), and *stuckenbergi* sp. n. (1 ♂). Of the total of 12 named species, only a single specimen is available for six species, the female is unknown for eight species and the male for one species. Thus, the southern African fauna of *Atherimorpha* may be still poorly known.

It must be noted that (1) only one specimen is measured in five species, so the range of individual variation is not known of the head structures, and relative lengths of the segments of legs, and those of wing veins; (2) the wings illustrated are not mounted on slides and so the relative size of each cell is not accurately shown.

ACKNOWLEDGMENTS

This paper is dedicated to Dr Brian R. Stuckenberg, who has prepared all of the material and has urged us to study it. Without his invaluable advice and encouragement the preparation of this paper would not have been possible.

Most of the drawings of male genitalia were made by Miss Keiko Moroi, to whom we are much indebted.

ABBREVIATIONS AND TERMS USED IN TEXT AND ILLUSTRATIONS

The terms used for male genitalic structures discussed in this paper are the same as those in Nagatomi (1984), but some of them are changed; for (1) aedeal-

¹ Seventh supplement to Nagatomi (1984) on the male genitalia of lower Brachycera.

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gal dorsoanterior sclerite, (2) basistylar dorso-inner anterior process, (3) basistyle, (4) dististyle, and (5) 'half opened umbrella', read (1) endophallic sclerite, (2) gonocoxal apodeme, (3) gonocoxite, (4) gonostylus, and (5) half opened umbrella-sclerite.

Wing (Fig. 25): A, vein R_5 ; B, vein between 1st submarginal cell (cell r_{2+3}) and 1st posterior cell (r_5); C, vein between 1st posterior cell and discal cell; D, m-cu crossvein (= vein between 2nd basal cell and 5th posterior cell); E, vein between 5th posterior cell (cell cua_1) and anal cell; F, mouth of anal cell; X, mouth of 1st submarginal cell; Y, mouth of 2nd submarginal cell (cell r_4); Z, mouth of 1st posterior cell.

Male genitalia: AA, anterior bar of aedeagus; C, cercus; DP, dorsal plate; ES, endophallic sclerite; GA, gonocoxal apodeme; GC, gonocoxite; GS, gonostylus; H, half opened umbrella-sclerite; PVP, anterolateral projection of ventral plate; S9, sternum 9; S10, sternum 10; T9, tergum 9; VP, ventral plate.

GENERIC AFFINITIES OF *ATHERIMORPHA*

Nagatomi (1982b) revised the genera of Rhagionidae and recognised the *Rhagio*-group and the *Chrysopilus*-group. The *Rhagio*-group includes *Atherimorpha*, *Arthroteles*, *Rhagio*, *Desmomyia*, *Rhagina* and *Neorhagio*, and the *Chrysopilus*-group contains *Arthroceras*, *Chrysopilus*, *Schizella*, *Stylospania* and *Solomomyia*. The diagnosis of the *Rhagio*-group is as follows: (1) setae on the metapleuron are confined to the anterior part and are absent on posterior part (in *Rhagio* and its related genera) or run from lower posterior part to upper anterior part (in *Atherimorpha* and *Arthroteles*), and (2) tibial spurs are 0 : 2 : 2. Whereas in *Chrysopilus*-group, (1) setae on the metapleuron are present on posterior part as well as anterior part and (2) tibial spurs are 0 : 2 : 1. Thus *Arthroteles* is consolidated to be most closely related to *Atherimorpha* phylogenetically (Malloch 1932, Stuckenberg 1956b), although it is easily separated from the latter by having the proboscis sclerotised and very long (apomorphic character) and the antennal style thicker, tapering apically, and 7-segmented (plesiomorphic character). In *Atherimorpha*, the proboscis is fleshy and short (plesiomorphic character) and the antennal style is more slender, flexible, and 3–7 segmented (in *ornata*, segmentation is absent or indistinct, an apomorphic character). However, in several species of *Atherimorpha* from southern Africa, the shape of the antennal style is nearer to that of *Arthroteles* and may not be clear-cut as a diagnostic character.

Arthroceras, whose antennal style is segmented, is accepted as the nearest relative of *Atherimorpha*. However, the similarity between *Arthroceras* and *Atherimorpha* is based on plesiomorphies and is superficial.

Atherimorpha ornata, in which the segmentation of the antennal style is indistinct or absent, is difficult to separate from *Rhagio* and *Desmomyia* externally, but differs from these genera in the arrangement of pile on the metapleuron.

Brunetti (1920) placed *Desmomyia* in 'Arthroceratinae' which is characterised by a segmented antennal style, but this is not correct. In *Desmomyia thereviformis*, the type and only species of the genus, a long unsegmented arista is present. For more details in this respect, see Nagatomi (1982b).

DIAGNOSIS OF *ATHERIMORPHA* FROM SOUTHERN AFRICA

A diagnosis of *Atherimorpha* is given below, based on 11 species [2 sp. (♂ ♀), 8 sp. (♂) and 1 sp. (♀)] from southern Africa.

Head: Eyes of male usually widely separated, in a few species nearly contiguous; eyes not divided into two portions by the size of facets; front roughly parallel-sided in many species; width of front varies greatly with species, and front just above antenna wider or not much narrower than front at median ocellus, and narrower or slightly wider than one eye from a direct frontal view; space between eyes becoming wide at vertex; face wider toward proboscis and without setae; antennal segments 1–2 subglobose, segment 3 conical or onion-shaped and with a 5–7 segmented style, whose basal portion varies in thickness with species and whose length is not shorter than rest of antenna; in *ornata*, segmentation of antennal style is indistinct or absent; palpus subcylindrical and with basal segment much shorter than the apical one; proboscis not rigid and not conspicuously long.

Thorax: Setae on metapleuron run linearly from lower posterior part to upper anterior part; mesonotal setae absent or few on paler stripes alongside median narrow dark vitta, but abundant on that portion in *irwini*; subscutellum absent.

Wings: Vein R_{2+3} ending on costa far beyond vein R_1 ; vein R_5 ending at wing margin beyond wing tip; vein M_4 arising from 2nd basal cell; anal cell narrowly open or closed at wing margin (it varies within species); minor axis of axillary comparatively short in most species and apical portion of wing is usually broadly rounded in that case; costa and vein R_1 with microtrichia and wing margin (including alula) ciliate.

Legs: Tibial spurs well developed and 0 : 2 : 2; tibiae with setae which vary in length with species; hind coxa with a mid-ventral knob.

Sexual dimorphism: Among the southern African *Atherimorpha*, both sexes are known only in the following 4 species: *albipennis* (after Bezzi 1926), *irwini*, *mensaemontis* (Stuckenberg 1961), and *ornata*. The eyes of male are nearly contiguous in *irwini* but widely separated in other 3 species, although the male front is narrower in *mensaemontis* than in *albipennis* and *ornata*. The front is of about the same breadth in both sexes in *albipennis*, but wider in female than in male in other 3 species, although the difference is not conspicuous in *ornata*. In the characters other than width of front, no striking sexual dimorphism is found.

MALE GENITALIA OF *ATHERIMORPHA* FROM SOUTHERN AFRICA

From 11 species whose males are known, the genitalia of six were examined. The male genitalia of *bevisi*, *crassitibia* and *mensaemontis* are very similar to one another, especially those of the latter 2 species. However, these 3 species are at once distinguished externally. This is so between *angustifrons* and *longicornu*. The male genitalia of *ornata* are conspicuously different from those of the 5 species above. The male genitalia of sp. D are also characteristic and Stuckenberg (1961) wrote, 'This species is atypical and perhaps cannot be included in *Atherimorpha*.' In sp. D, the ventral distal edge of gonocoxite is 'produced into an irregular lobe extending inwards and backwards' and mid-protruded part formed by dorsal plate (or plus ventral plate) with a pair of ventral horn-like pendants (Stuckenberg 1961).

The differences between *ornata* and the 5 species above are shown in the key (b). Concerning the 5 species, some common characters, other than those in the key (b), are given below.

Gonostylus finger-like and minute setose; half opened umbrella-sclerite apparently present within the sac formed by dorsal and ventral plates, although it is not shown in the illustrations of most species examined; anterolateral part of ventral plate protruded beneath ventral surface of gonocoxite; anterior bar of aedeagus flattened laterally in dorsal view.

The structure of male genitalia in *ornata* and sp. D is apparently specialised or secondary, and it would not be appropriate to erect a new genus at present for each of these 2 species.

CORRECTIONS AND ADDITIONS TO NAGATOMI (1984) ON THE GENITALIA OF LOWER BRACHYCERA

On p. 137, line 1–2 (under *Atherimorpha* sp. from Australia) in Nagatomi (1984), delete the following sentence: 'It is possible that posterior protruded part of dorsal plate corresponds to interbases.'

Atherimorpha ornata (from southern Africa), whose sternum 9 is not bulging out, runs to couplet 14 in the key to genera of Rhagionidae (Nagatomi 1984: 121–122). However, *Atherimorpha ornata* is easily distinguished from the species of *Chrysopilus*, *Schizella*, *Solomomyia*, *Rhagina* and *Rhagio* discussed by Nagatomi (1984).

Nagatomi (1984: 137) recorded for *Atherimorpha* sp. from Australia, 'Along each side of posterior part of aedeagus (and just behind aedeagal dorso-anterior sclerite [= endophallic sclerite]) there is a short sclerite.' This sclerite is also seen in *Neorhagio* sp. (from Mexico), *Rhagina* sp. (from Java) and *Rhagio yasumatsui* (from Japan) (Nagatomi 1984). Stuckenberg (1973: 655) recognised already the sclerite noted above in *Rhagio scolopacea* and some South African and Australian species of *Atherimorpha*.

The sclerite in question was not definitely detected in the 6 species of *Atherimorpha* here examined, although it may have been overlooked at least in some species.

THE VALIDITY OF ASSIGNING SOUTH AFRICAN SPECIES TO *ATHERIMORPHA*

One of the aims of this study was to ascertain whether common or synapomorphic characters can be found that confirm the assignment of the South African species under consideration to the genus *Atherimorpha*. For the present, it is concluded that no separate genus can be recognised for these species. This is a matter of biogeographical importance, as *Atherimorpha* is recorded as an AS group.

Hennig (1960) discussed the origin of AS groups, that is, the groups of Diptera occurring in South America as well as in Australia or New Zealand. Nagatomi (1982a) discussed the geographical distribution of the genera and families of the lower Brachycera, excepting Stratiomyidae and Tabanidae. The AS groups in Pelecorhynchidae (consisting of 1 genus) and Rhagionidae (including 21 genera) are as follows: *Pelecorhynchus* Macquart, 1850, Australia and Tasmania (27 sp.) and South America (Chile) (6 sp.); *Austroleptis* Hardy, 1920, Australia and Tas-

mania (3 sp.) and South America (Chile and Argentina) (5 sp. of which 3 are described by Nagatomi & Nagatomi 1988).

Atherimorpha belongs to the AS group too and is distributed in Australia-Tasmania (20 sp.), South America (Chile-Argentina) (14 sp.) and southern Africa (12 sp. of which 8 are here described as new) (see also Malloch 1932 and Paramonov 1962).

However, many species from southern Africa differ from those of the other two continents by having the following characters, most of which were already pointed out by Stuckenberg (1956a: 142–143): (1) Eyes of males widely separated (in *angustifrons* and *irwini*, the eyes are nearly contiguous). (2) Antennal style usually thicker (in several species, it is quite slender). (3) Mesonotal setae are absent or few on paler stripes alongside median dark vitta (in *irwini*, the setae are abundant). (4) Setae on metapleuron less abundant than in most species from the other two continents. (5) Postalar declivity of mesonotum bare. (6) Apical portion of wing broadly rounded and axillary comparatively short in minor axis (they are not so in *angustifrons* and *irwini*, and wing is not so rounded apically in *gracilipennis*).

In many species from Chile-Argentina and Australia-Tasmania, the following character states occur: (1) Eyes of male contiguous or sometimes nearly so. However, in several species from Australia-Tasmania, the eyes are widely separated and the front is nearly parallel-sided or divergent toward ocelli according to species. (2) Antennal style comparatively thin. (3) Mesonotal setae on paler stripes are abundant (in some species from Australia-Tasmania, they are not). (4) Setae on metapleuron more abundant (in some species from Chile-Argentina, they are sparse). (5) Postalar declivity of mesonotum often has some stiff setae. (6) Minor axis of axillary is comparatively long.

Dr B. R. Stuckenberg (pers. comm.) states that in *Atherimorpha* from southern Africa, many species live in grassland or montane heath, while only a few species (*mensaemontis*, *flavicorpus* and *ornata*) occur in forest areas. The grassland and heath species 'tend to have a wide frons and also broad, large wings', while the forest species 'usually have a narrow frons or even holoptic males.'

In the species from Tasmania (= largely forested area), the male eyes are as follows: *rieki* and *vernalis*: widely separated; *fulva*, *infuscata*, *montani* and *tonnoiri*: subcontiguous; *occidens*: completely contiguous (Paramonov 1962).

It may be said that many species from southern Africa are more plesiomorphic than those of the other two continents in the characters of (1)–(6) or (1), (2), (5) above.

At present, no significant distinguishing character is seen for *Atherimorpha* species from southern Africa as an undivided whole, which demonstrates their taxonomic distinctiveness from those of the other two continents.

There are few Gondwana relics extending over all three southern continents. Are the *Atherimorpha* species from southern Africa truly congeneric with those of other two continents? Their similarity may possibly be the result of convergence. However, no evidence in support of parallel development is seen at the level of our present knowledge.

There is one character which is possibly a synapomorphy common to the three clusters of species, namely the arrangement of the metapleural pile. This pile runs linearly from the lower posterior part to the upper anterior part. Such a distribution of pile is present only in *Atherimorpha* and *Arthroteles* among the genera of Rhagionidae. The nature of this unique character is uncertain at present.

The male genitalia in many species from southern Africa seem not to be different generically from those of *Atherimorpha* sp. (Nagatomi 1984: 135–137) from Australia. However, the male genitalia of *A. ornata* from South Africa are very different (Figs. 83–86) and could possibly represent another genus. A broad study of the male genitalia of species from Chile-Argentina and Australia-Tasmania must be made before the problem can be reconsidered.

THE DISTRIBUTION OF SPECIES GROUPS WITHIN *ATHERIMORPHA*

The present study fails to reveal the existence of species groups common to South Africa, Chile-Argentina and Australia-Tasmania. This question will be discussed again, after *Atherimorpha* species from Chile-Argentina and Australia-Tasmania are revised. Perhaps a number of species groups or subgenera are recognisable by the extensive comparison of male genitalia.

ORIGIN OF *ARTHROTELES*

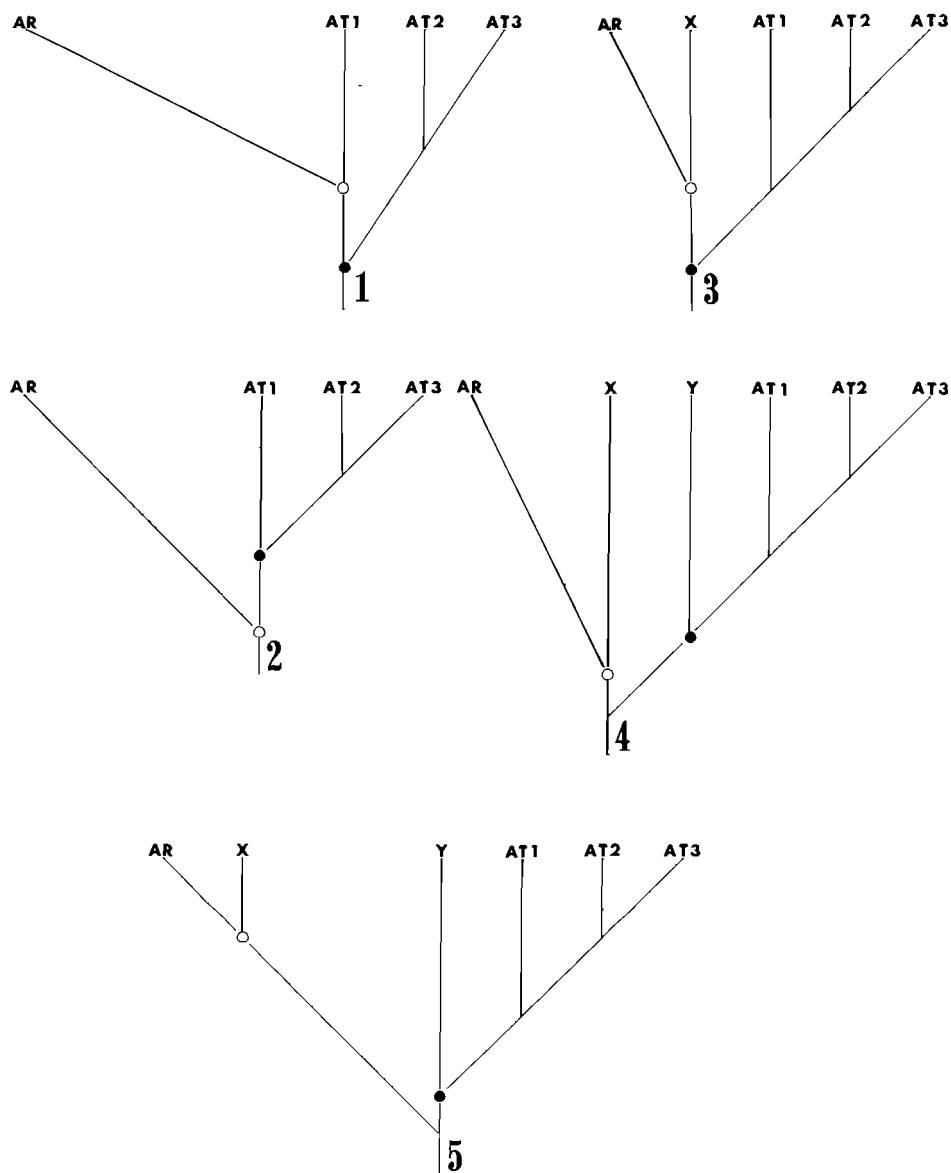
Which is older geologically, *Arthroteles* or *Atherimorpha*? Various relationships are conceivable in the evolution of *Arthroteles* and some of them are shown in Figs 1–5. *Arthroteles* is older than *Atherimorpha* in Figs 2 & 4 and *vice versa* in Figs 1, 3, 5. *Atherimorpha* is monophyletic in Figs 2–5 but polyphyletic in Fig. 1. *Arthroteles* originates in southern Africa in Figs 1 & 5 but on Gondwana (or on one of the three continents which were closely located) or on somewhere else in Figs 2–5.

In *Arthroteles*, the proboscis is long and sclerotised. This character is apomorphic and diagnostically important. This type of proboscis is constant in structure and adapted for nectar feeding.

The male genitalia of *Arthroteles* differ from those of *Atherimorpha* in the presence of a median plate (Stuckenberg 1956b, Nagatomi 1984). It is not clear which type of male genitalia is primitive and which genus is older.

If the male genitalia of *Arthroteles* are more primitive than those of *Atherimorpha*, the relationships in Figs 2, 4, 5 are more probable, rather than that in Fig. 3.

In each scheme of relationships shown in Figs 1–5, some difficulty is apparent. Fig. 1: Generic distinction is apparently profound between *Arthroteles* and *Atherimorpha*, that is to say, *Atherimorpha* species from southern Africa are more similar phylogenetically to those of other two continents than to *Arthroteles*. Present evidence provides no information on this point. Fig. 2: *Arthroteles* is too old in origin. Figs 3–5: The elements X and Y are hypothetical and have no substance. However, it seems to us that the supposition of X and Y is necessary, simply because the presence of some extinct taxa or missing links is more possible rather than their absence.



Figs 1–5. Possible phylogenetic relationship between *Arthrotes* and *Atherimorpha*. AR, *Arthrotes*; AT1, *Atherimorpha* sp. or spp. in southern Africa; AT2, *Atherimorpha* sp. or spp. in Australia-Tasmania; AT3, *Atherimorpha* sp. or spp. in Chile-Argentina; X, Y, unrecorded or extinct genus; ○, origin of *Arthrotes*; ●, origin of *Atherimorpha*.

Key (a) to 11 species of *Atherimorpha* from southern Africa (based on male)

- 1 Eyes nearly contiguous and front about as wide or narrower than median ocellus (Figs 10 & 54) 2
 — Eyes widely separated 3
- 2(1) Body larger (5,3 mm in length); wing stained with brown to dark brown, oily and not grayish; antennal style c 1,6 times as long as rest of antenna; palpus (except apex) yellowish brown; femora yellowish brown ... **irwini**
 — Body smaller (3,6–3,7 mm in length); wing brown fumose and grayish; antennal style c 1,2 times as long as rest of antenna; palpus dark brown to black; femora brown to dark brown **angustifrons**
- 3(1) Front just above antenna about 1/2 or less than 1/2 as wide as one eye from a direct frontal view (Figs 30, 42, 71 & 79) 4
 — Front just above antenna much over 1/2 as wide as one eye from a direct frontal view (Figs 6, 20, 60 & 87) 7
- 4(3) Fore tibia normal and much narrower than fore femur; wing without darkened parts (except stigma); thorax, abdomen, coxae and palpus yellowish (or reddish) brown 5
 — Fore tibia swollen and nearly as wide as fore femur (Fig. 36); wing with several darkened parts (besides stigma); thorax, abdomen, coxae and palpus dark brown to black **crassitibia**
- 5(4) Setae on abdomen pale or pale yellow; abdomen longer and roughly 1,5–2,0 times as long as head and thorax combined 6
 — Setae on abdomen black, abdomen shorter and 1,0–1,4 times as long as head and thorax combined (Fig. 74) **mensaemontis**
- 6(5) Body smaller (3,8–5,0 mm in length); abdominal terga 2–7 (probably as well as sterna 2–7) darker at anterior portions (Fig. 81); genitalia large in proportion to segment 7 and well exposed (Fig. 81) **ornata**
 — Body larger (6,7 mm in length); abdomen evenly yellowish brown (Fig. 45); genitalia small in proportion to segment 7 and telescopically concealed (as in most species of *Atherimorpha* examined) (Fig. 45) **flavicorpus**
- 7(3) Distance from antenna to median ocellus as long as or shorter than ocellar triangle (Figs 59 & 62); abdomen long (Fig. 64) 8
 — Distance from antenna to median ocellus distinctly longer than ocellar triangle 9
- 8(7) Body larger (6,8 mm in length); 'ocellar tubercle very prominent, elevated, turret-like' (Fig. 59); palpus longer (Fig. 59—after Stuckenberg 1956a) **latipennis**
 — Body smaller (4,4–5,2 mm in length); ocellar tubercle normal and not prominently raised (Fig. 62); palpus shorter (Fig. 62) **longicornu**
- 9(7) Wing membrane brown fumose 10
 — Wing membrane milky white; femora and tibiae yellowish brown to brown **albipennis**

- 10(9) Femora dark brown to black and the same as coxae; antennal style 1.0–1.4 times as long as rest of antenna; antennal segment 3 wider than segment 2 (Fig. 21); vein R_5 is longer and originates usually before apex of discal cell (Fig. 25) **bevisi**
- Femora yellowish brown to brown and paler than coxae which are dark brown to black; antennal style c. 1.8 times as long as rest of antenna; antennal segment 3 not wider than segment 3 (Fig. 88); vein R_5 is shorter and originates behind apex of discal cell **stuckenbergi**

Key (b) to 6 species of *Atherimorpha* from southern Africa based on male genitalia

- 1 Dorsal plate consisting of basal wide part and mid-protruded part; ventral plate short and swollen, mostly or partly transparent, bipartite or apparently divided by a mid line; ventral surface of gonocoxite bluntly pointed apically; gonocoxal apodeme long; sternum 9 large and bulging out; tergum 9 trapezoid or rectangular with postero-lateral part rounded; cercus about as long as or somewhat shorter than sternum 10; sternum 10 rather pentagonal, wider than or as wide as long according to species 2
- Dorsal plate gradually tapering apically, long and extending beyond apex of gonocoxite; ventral plate a pair of long tubes whose bases are fused with dorsal plate near ventral base of the latter; ventral surface of gonocoxite long and wide, roughly parallel-sided, and with posterior margin having U-shaped concavity near inner apex; gonocoxal apodeme short; sternum 9 small and not bulging out; tergum 9 concave both at anterior and posterior margins, with postero-lateral angle protruded to some degree; cercus small, much shorter than sternum 10; sternum 10 much longer than wide, somewhat narrower anteriorly, and rounded posteriorly (Figs 83–86) ... **ornata**
- 2(1) Endophallic sclerite large and tapering apically in dorsal view; ventral plate bipartite, diverging apically, folded twice and then fused with mid-protruded part of dorsal plate 3
- Endophallic sclerite small and elliptic in dorsal view; ventral plate onion-shaped, mostly colourless, apparently divided by a mid line and fused apically with mid-protruded part of dorsal plate 5
- 3(2) Minute setose transparent area of ventral plate larger in relation to size of ventral plate than in *bevisi*; sternum 9 and tergum 9 wider than in *bevisi* . 4
- Minute setose transparent area of ventral plate smaller in relation to size of ventral plate than in *crassitibia* and *mensaemontis*; sternum 9 and tergum 9 narrower than in *crassitibia* and *mensaemontis* (Figs 26–29) **bevisi**
- 4(3) Sternum 10 narrower than in *mensaemontis*; setose area on tergum 9 more confined to posterior margin than in *mensaemontis*; (it is necessary to examine more material to see whether the differences above are significant or not) (Figs 38–41) **crassitibia**
- Sternum 10 wider than in *crassitibia*; setose area on tergum 9 more extensive than in *crassitibia* (Figs 77–78) **mensaemontis**

- 5(2) Basal part of dorsal plate less swollen than in *longicornu* at posterolateral margin; sternum 9 more angulate at posterolateral part than in *longicornu*; tergum 9 shorter than in *longicornu* (Figs 16–19) **angustifrons**
 — Basal part of dorsal plate swollen at posterolateral margin; sternum 9 more rounded at posterolateral part than in *angustifrons* (Figs 67–70) **longicornu**

Atherimorpha albipennis Bezzi

Figs 6–9

Atherimorpha albipennis Bezzi, 1926: 318. Type locality: South Africa (Cape: Hottentots Holland Mts., 4 000 ft., Caledon).

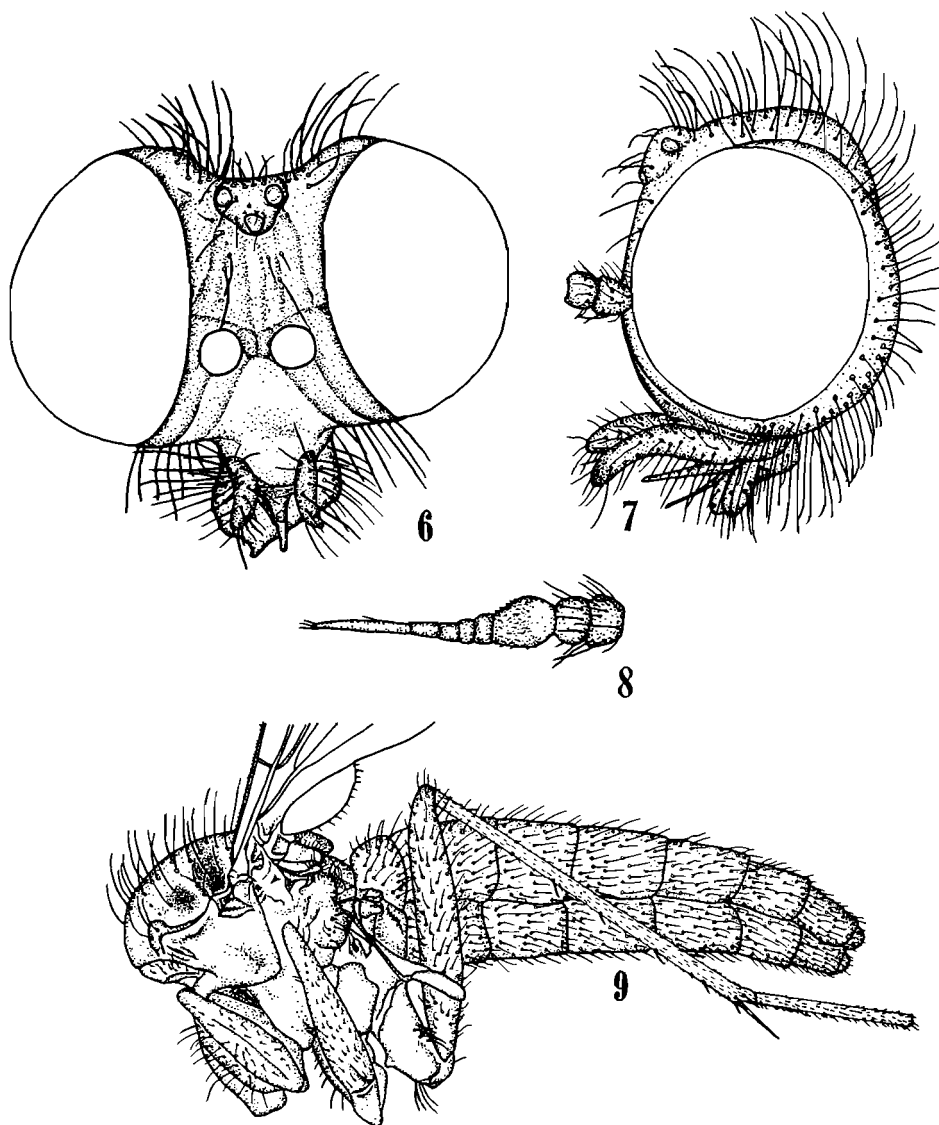
Among the South African *Atherimorpha*, this species is characterised by having the wing membrane milky white.

Male: Dark brown to black; halter yellowish brown; femora, tibiae, and basitarsi (except apices) yellowish brown to brown; abdomen pale pilose, but sterna 4–7 black setose, front at median ocellus c. 1,8 times width of ocellar triangle; face wide; antennal style c. 1,1 times as long as rest of antenna.

Head: (Figs 6–8): Dark brown to black, and pale gray pollinose; front (except above antenna), ocellar triangle, vertex, upper occiput (except cerebrale), antennal segments 1–2 and palpus with stiff black setae which are longer on upper occiput, shorter on antennal segments 1–2, and become pale on base of palpus; lower occiput, cheek and proboscis with pale pile; width of one eye at greatest point from a direct frontal view 2,0 times distance from antenna to median ocellus, 0,8 times width of face at lowest portion from a direct frontal view, and 1,1 times width of front just above antenna; width of front at median ocellus 0,8 times that just above antenna, about equal to that at narrowest point, and 1,8 times width of ocellar triangle; ocellar triangle 1,2 times as wide as long; space between antennae 0,4 times width of ocellar triangle; distance from antenna to ventral base of palpus 2,2 times that from antenna to median ocellus which is 1,4 times length of ocellar triangle; clypeus 2,6 times as wide as parafacials; antenna 3,2 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style (along midinner surface) 100 : 100 : 200 : 429 and their relative thicknesses 129 : 129 : 143 : 86 ; antennal style 5-segmented and 1,1 times as long as antennal segments 1–3; last segment of antennal style 0,6 times as long as antennal style; palpus as long as distance from antenna to ventral base of palpus.

Thorax: Dark brown to black, and pale gray pollinose; mesonotum with 5 darker stripes, of which the middle one is narrow and outer lateral stripes are interrupted at the suture; a darkened narrow short transverse band may be present just behind suture; mesonotum and scutellum with stiff black setae, many of which are long; pro- and metapleura with pale pile which is longer on the latter; metapleural pile distinctly over 1/2 minor axis of metapleuron in length of row.

Wing: Membrane milky white; stigma yellowish brown to brown and ending at or near apex of vein R₁; veins brown to dark brown; A 1,6 times as long as B, which is 1,1 times as long as C; E as long as C and 3,4 times as long as D; F 0,4



Figs 6–9. *Atherimorpha albipennis*, male. 6–7, Head, direct frontal view and lateral view; 8, antenna, outer view; 9, thorax and abdomen, lateral view.

times as long as D; Y 0,45 times as long as X and equal in length to Z; major axis of axillary 3,8 times as long as its minor axis; halter yellowish brown.

Legs (Fig. 9): Coxae same as pleura; rest of legs yellowish brown to brown and tarsomeres 2–5 and apical portions of basitarsi somewhat darker; femora more or less pale gray pollinose; fore and hind coxae chiefly pale pilose, mid coxa chiefly black setose, and femora shorter black setose; tibial black setae distinct but shorter than thicknesses of tibiae; relative lengths of segments (excluding coxa and trochanter) of fore leg 121 : 176 : 100 : 45 : 30 : 15 : 24, of mid leg

148 : 212 : 97 : 42 : 30 : 15 : 24, of hind leg 197 : 300 : 118 : 55 : 42 : 21 : 24 and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 33 : 20 : 12 : 11 : 11.

Abdomen (Fig. 9): Dark brown to black, and pale gray pollinose; dorsum and sterna 1–3 pale pilose; sterna 4–7 black setose.

Length: Body 5,0 mm; wing 5,4 mm; fore basitarsus 0,83 mm.

Distribution: South Africa.

Material examined: 1 ♂, SOUTH AFRICA: *Cape Province*: Hottentots Holland Mts., Caledon Cape, 1916, Barnard.

Bezzi (1926) wrote, 'Type ♂ and ♀, a single couple of specimens from Hottentots Holland Mts., 4 000 ft., Caledon, Cape, 1916 (K. H. Barnard). I am not sure about the sexes, but I have considered as the male the specimen with longer antennae and with closed anal cell.' and 'Antennae . . . with a thick style, which in the male is distinctly longer than the whole antenna, while in the female it is shorter than the antenna.' However, in the male specimen we have examined, the antennal style is 1,1 times as long as antennal segments 1–3 and anal cell is distinctly open.

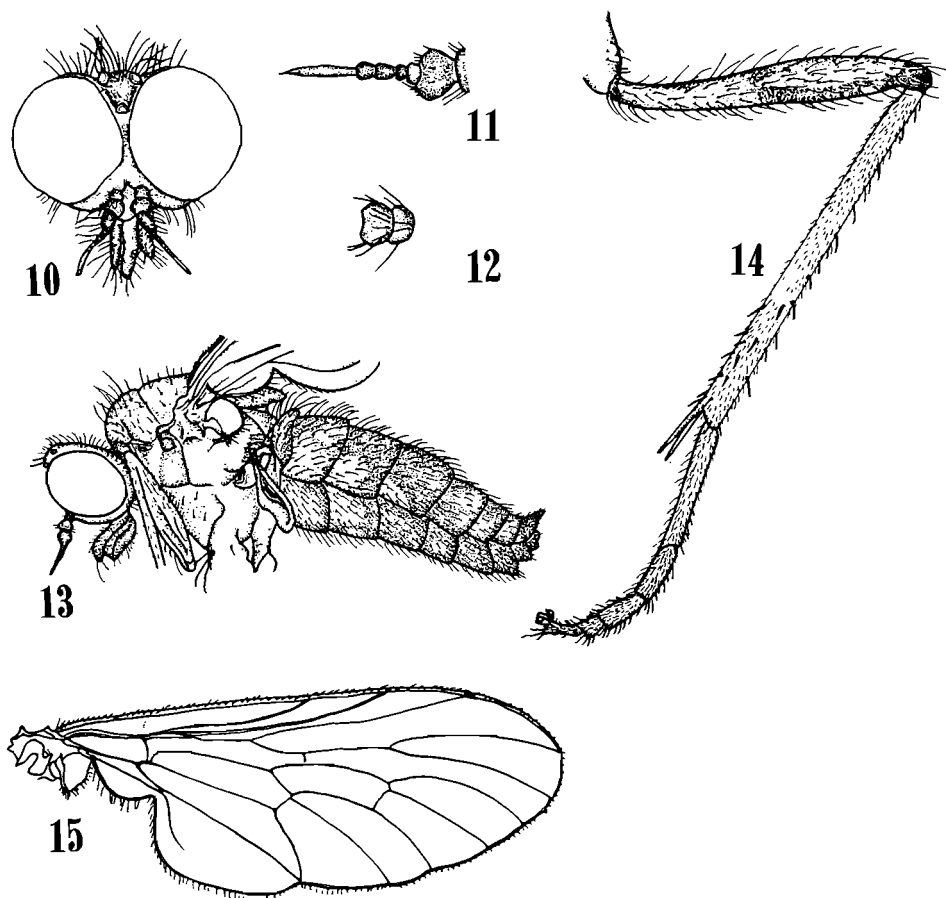
***Atherimorpha angustifrons* sp. n.**

Figs 10–19

This species (whose female is unknown) is similar to *irwini*, but may easily be separated from it as shown in the key (couplet 2).

Male: Dark brown to black; halter, tibiae, and basitarsi (except apices) yellowish brown to brown; abdomen pale pilose; front nearly contiguous and front at median ocellus *c.* 0,6 times as wide as ocellar triangle; face wide.

Head (Figs 10–12): Dark brown to black, and pale gray pollinose; ocellar triangle, vertex, upper occiput, antennal segments 1–2 and palpus with black setae; lower occiput, cheek and proboscis with pale pile; width of one eye at greatest point from a direct frontal view 1,4–1,6 times distance from antenna to median ocellus, 0,8–0,9 times width of face at lowest portion from a direct frontal view, and 1,9–2,2 times width of front just above antenna; width of front at median ocellus 0,4 times that just above antenna, 2,0–4,0 times that at narrowest point, and 0,6 times width of ocellar triangle; ocellar triangle as wide as long; space between antennae 0,14 times width of ocellar triangle; distance from antenna to ventral base of palpus 1,2–1,3 times that from antenna to median ocellus, which is 1,7–2,0 times length of ocellar triangle; clypeus *c.* 2,5 times as wide as parafacials on a mid line; antenna 1,4–1,7 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style (along mid inner surface) 67 : 100 : 133 : 367 and their relative thicknesses 109 (100–117) : 133 : 133 : 50; antennal style 5-segmented and 1,2 times as long as antennal segments 1–3; last segment of antennal style 0,45 times as long as antennal style; palpus 0,9 times as long as distance from antenna to ventral base of palpus; data based on 2 specimens.



Figs 10–15. *Atherimorpha angustifrons*, male. 10, Head, direct frontal view; 11, antennal segment 3 and style, outer view; 12, antennal segments 1–2, outer view; 13, lateral view; 14, hind leg, anterior view; 15, wing.

Thorax: Dark brown to black, and pale gray pollinose; mesonotum with 3 narrow darker stripes; mesonotum and scutellum with black setae; pro- and metapleura with pale pile; metapleural pile not over 1/2 major axis of metapleuron in length of row.

Wing (Fig. 15): Membrane grayish or faintly tinged with brown; stigma slightly darker and ending at or near apex of vein R_1 ; veins brown to dark brown; A 1,9–2,0 times as long as B, which is as long as C; E 0,9–1,0 times as long as C and 3,6 times as long as D; F 0–0,3 times as long as D; Y 0,4 times as long as X and 0,9–1,3 times as long as Z; major axis of axillary 2,6 times as long as its minor axis; data based on 2 specimens; halter yellowish brown.

Legs (Fig. 14): Coxae dark brown to black, and pale gray pollinose; femora brown to dark brown; tibiae and each tarsomere 1 (except apical portion) brown or paler than tarsomeres 2–5 which are darkened; coxae and femora with black setae; setae on femora shorter than in coxae, but long in relation to those in other species; tibial black setae short; relative lengths of segments (excluding coxa and

trochanter) of fore leg 174(168–180) : 231(227–235) : 100 : 45(45) : 36(35–36) : 21(18–23) : 29(27–30), of mid leg 177(168–186) : 253(245–260) : 96 (91–100) : 45(45) : 29(27–30) : 17(14–20) : 29(27–30), of hind leg 231(227–235) : 313(300–325) : 112(110–114) : 50(45–55) : 36(35–36) : 19(18–20) : 31(30–32) and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 41(36–45) : 23(23) : 17(15–18) : 14(13–14) : 14(13–14); (N = 2).

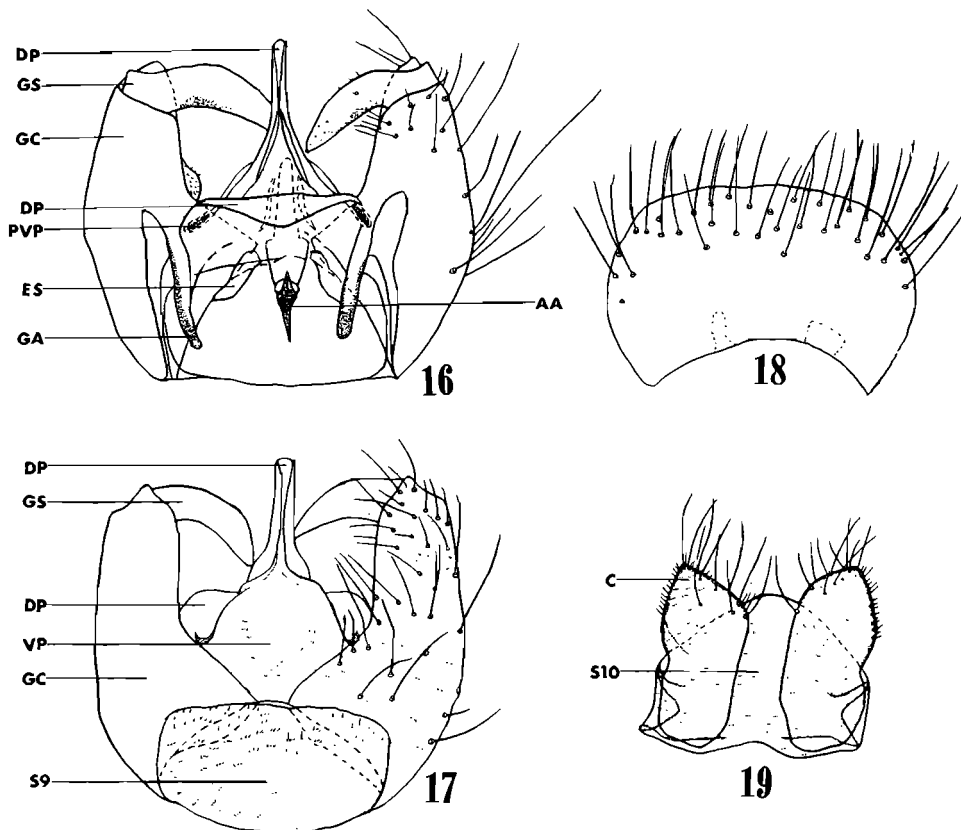
Abdomen (Fig. 13): Dark brown to black, and pale gray pollinose; above and below with pale pile which is longer on dorsum; setae on gonocoxite black.

Genitalia (Figs 16–19): Very similar to *longicornu*, but may be distinguished as follows: basal part of dorsal plate less swollen than in *longicornu* at posterolateral margin; sternum 9 more angulate at posterolateral part; tergum 9 shorter than in *longicornu*. Specimen dissected: 1 ♂, Zuurberg Range, north of Addo, E. Cape Prov., 10.iv.1961 (from Macchia Vegetation), B. & P. Stuckenberg.

Length: Body 3,6–3,7 mm; wing 3,6–3,7 mm; fore basitarsus 0,50–0,55 mm.

Female. Unknown

Distribution: South Africa.



Figs 16–19. Male genitalia of *Atherimorpha angustifrons*. 16–17, Dorsal and ventral views; 18, tergum 9, dorsal view; 19, sternum 10 and cerci, dorsal view.

Material examined: SOUTH AFRICA: *Cape Province*: Holotype ♂, Zuurburg Range, north of Addo, E. Cape Prov., 10.iv.1961 (from Macchia Vegetation), B. & P. Stuckenberg; Paratype ♂, same data as holotype. Deposited in Natal Museum, Pietermaritzburg, South Africa.

Atherimorpha bevisi Stuckenberg

Figs 20–29

Atherimorpha bevisi Stuckenberg, 1956a: 143. Type locality: Basutoland (Giant's Castle).

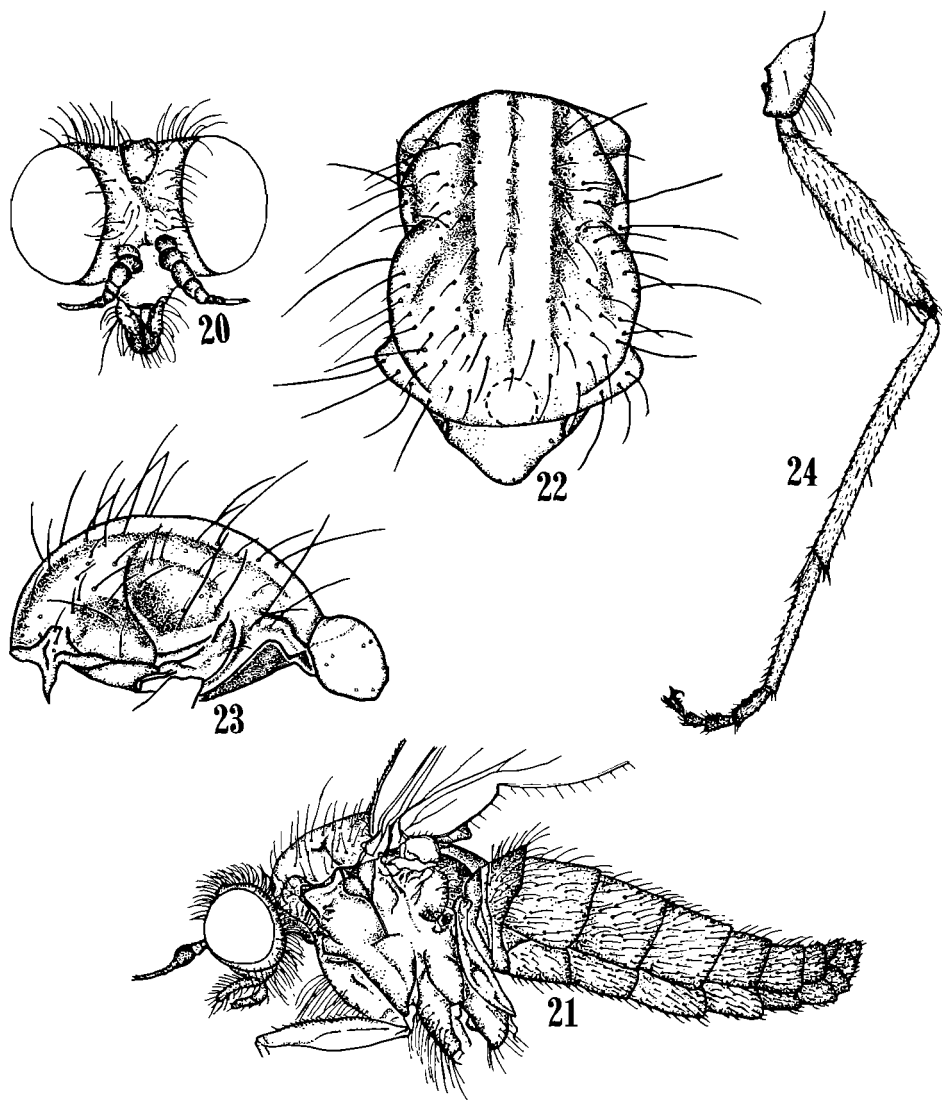
This species is similar to *stuckenbergi* but may easily be separated from it as shown in the key (couplet 11).

Male: Body (including antenna, palpus, proboscis and legs) dark brown to black; halter pale brown; abdomen pale pilose; front and face wide and front at median ocellus 2,3–2,5 times as wide as ocellar triangle; antennal style 1,0–1,4 times as long as antennal segments 1–3.

Head (Figs 20–21): Dark brown to black, and pale gray pollinose; front (except above antenna), ocellar triangle, vertex, upper occiput, antennal segments 1–2 and palpus with black setae which are shorter on antennal segments 1–2, stronger on upper occiput and which become pale on base of palpus; cheek, lower occiput and proboscis with pale pile which is shorter on proboscis; width of one eye at greatest point from a direct frontal view 1,4–1,7 times distance from antenna to median ocellus, 0,6–0,7 times width of face at lowest portion from a direct frontal view, and 0,9–1,1 times width of front just above antenna; width of front at median ocellus 0,9–1,1 times that just above antenna, 1,1–1,2 times that at narrowest point, and 2,3–2,5 times width of ocellar triangle; ocellar triangle as wide as long; space between antennae 0,4–0,7 times width of ocellar triangle; distance from antenna to ventral base of palpus 1,4–1,7 times that from antenna to median ocellus, which is 1,5–1,8 times length of ocellar triangle; clypeus 2,0–2,7 times as wide as parafacials on a mid line; antenna 2,3–2,5 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style (along mid inner surface) 96(75–133) : 100 : 167(143–200) : 426(350–500) and their relative thicknesses 125(100–150) : 144(125–167) : 169(150–200) : 98(75–133); antennal style 5-segmented and 1,0–1,4 times as long as antennal segments 1–3; last segment of antennal style 0,4–0,6 times as long as antennal style; palpus 0,9–1,2 times as long as distance from antenna to ventral base of palpus; data based on 10 specimens.

Thorax (Figs 22–23): Dark brown to black, and pale gray pollinose; in mesonotum, two darker stripes are easily seen but in better preserved specimens, there are other darker parts as shown in Figs 22–23; mesonotum and scutellum with black setae which are mostly or partly longer and stronger and which are often partly pale; pro- and metapleura with pale pile which is longer on the latter; metapleural pile distinctly over 1/2 major axis of metapleuron in length of row.

Wing (Fig. 25): Membrane brown to dark brown fumose and grayish; stigma darker and ending at or just beyond apex of R_1 ; A 1,9–2,8 times as long as B, which is 0,7–1,1 times as long as C; E 0,8–0,9 times as long as C and 2,6–4,4 times as long as D; F 0,1–0,5 times as long as D; Y 0,5–0,6 times as long as X and



Figs 20–24. *Atherimorpha bevisi*, male. 20, Head, direct frontal view; 21, lateral view; 22–23, mesonotum and scutellum, dorsal and lateral views; 24, hind leg, anterior view.

1,0–1,4 times as long as Z; major axis of axillary 3,7–4,3 times as long as its minor axis; halter pale brown.

Legs (Fig. 24): Dark brown to black; coxae and femora pale gray pollinose; pile on coxae pale and that on femora shorter and either chiefly black or chiefly pale; black setae on tibiae distinct and longer setae about as long as or shorter than thicknesses of tibiae; relative lengths of segments (excluding coxa and trochanter) of fore leg 167(155–175) : 200(184–214) : 100 : 47(43–52) : 31(27–36) : 22(17–26) : 30(28–35), of mid leg 192(174–204) : 259(241–279) : 93(87–100) : 46(39–50) : 28(23–31) : 17(14–19) : 29(25–32), of hind leg 246(229–260) : 300(277–325) :

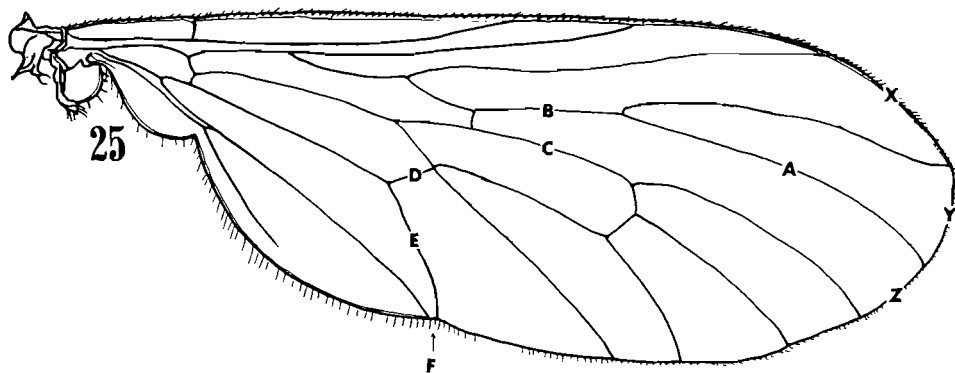


Fig. 25. Male wing of *Atherimorpha bevisi*.

105(97–111) : 56(48–62) : 34 (29–39) : 20(17–22) : 31(29–36) and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 44(36–50) : 23(21–26) : 17(14–19) : 15(13–17); 14(13–17); (N = 10).

Abdomen (Fig. 21): Dark brown to black, and pale gray pollinose; abdomen covered with pale pile which is shorter on venter; setae on gonocoxites chiefly black.

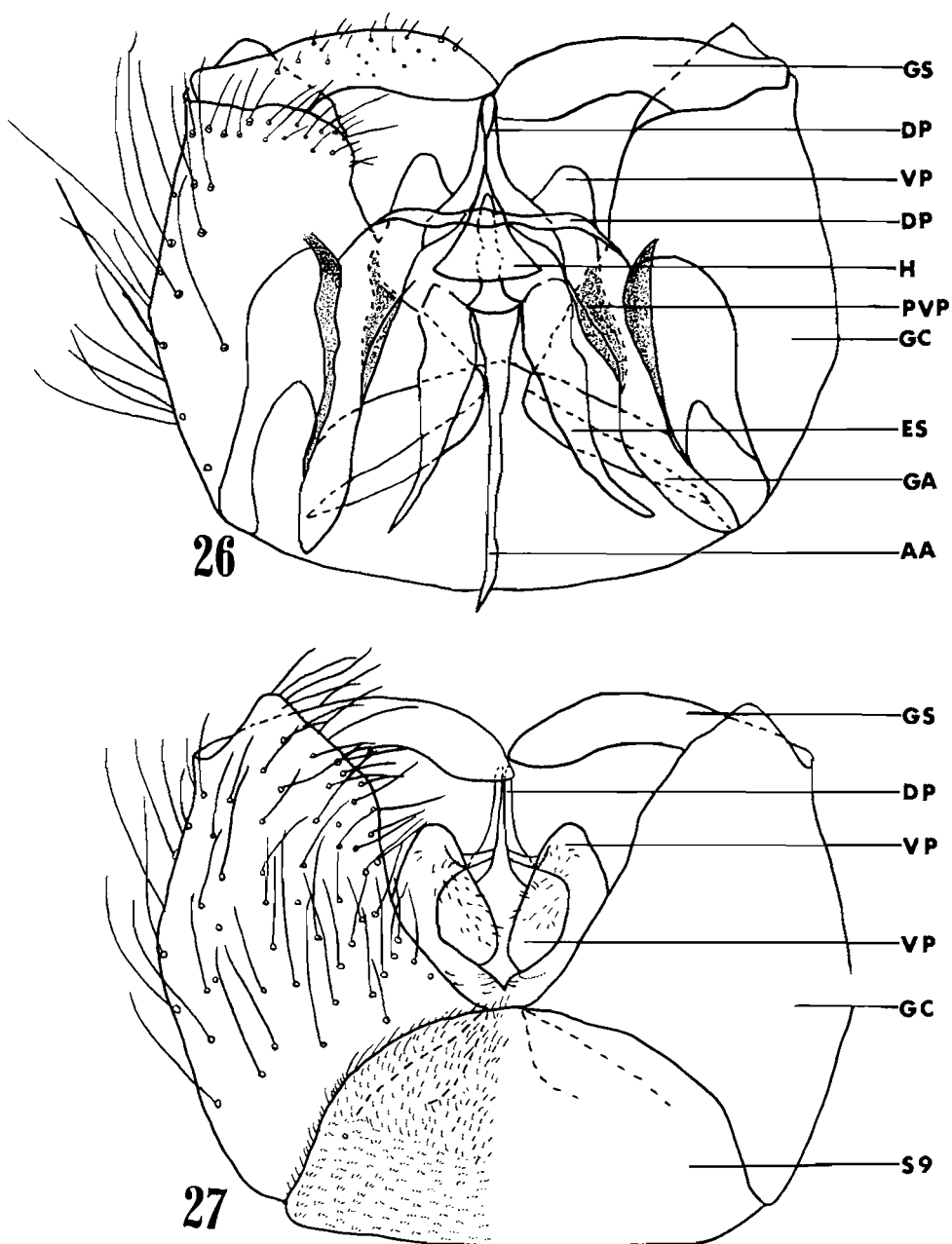
Genitalia (Figs 26–29): Gonostylus cylindrical, with apex bluntly pointed, outer margin gently convex, with inner margin gently concave and with minute setae; paired gonocoxites wider than long; each gonocoxite short and wide, with strong setae which are absent on dorso-inner part (except apical portion); ventral surface of gonocoxite rather triangular; in dorsal plate, basal part (= dorsal bridge) making an acute angle with mid-protruded part; in direct dorsal view, visible basal part of dorsal plate strap-like; ventral plate bipartite, contiguous basally, diverging apically, with inner portion transparent, swollen, and minutely setose, and with apical inner part lamellate; apical portion of ventral plate folded twice and then fused with mid-protruded part of dorsal plate; anterior bar of aedeagus is long and flattened laterally in dorsal view and appears to be rounded apically in lateral view; endophallic sclerite large and long and tapering apically (= anteriorly) in dorsal view; gonocoxal apodeme long; sternum 9 rather semicircular or triangular, much wider than long and than gonocoxite; tergum 9 rather trapezoid, with postero-lateral part rounded, much wider than long and with strong setae on posterior part; cercus rather elliptical, much longer than wide, and nearly as long as tergum 9; sternum 10 rather pentagonal, and wider than long. Specimens dissected: 2 ♂, Naudes Nek, Barkly East Dist., Eastern Cape Prov., 8–9.i.1979, J. Londt & B. Stuckenberg.

Length: Body 4,1–5,5 mm; wing 4,7–6,4 mm; fore basitarsus 0,63–0,78 mm.

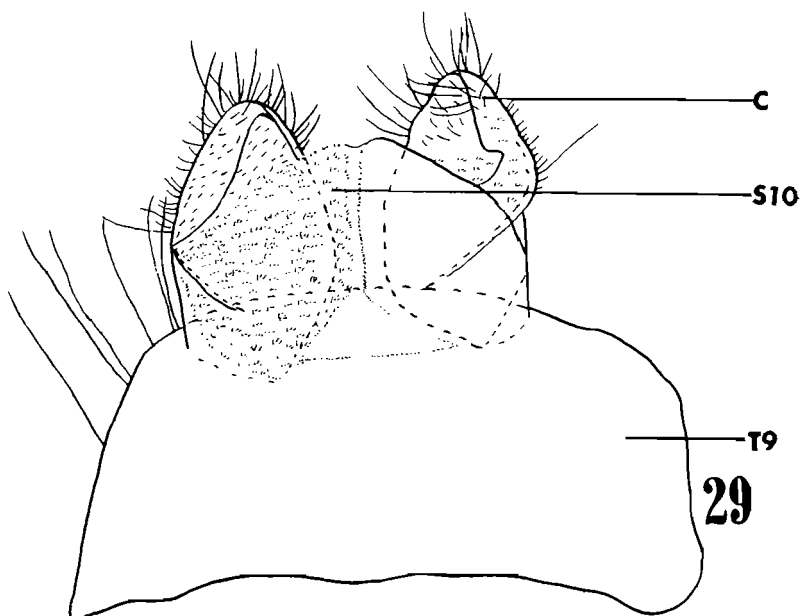
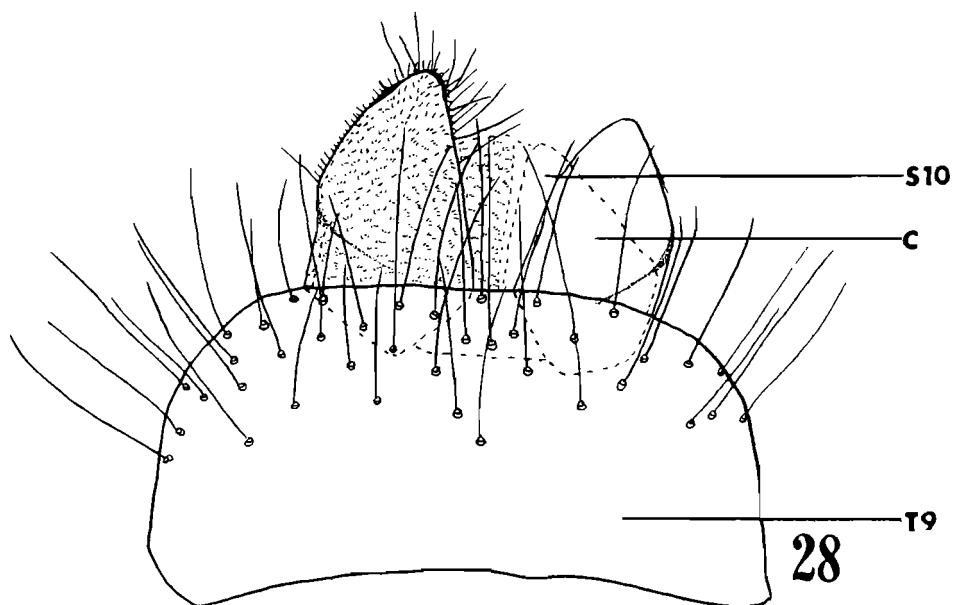
Female: Unknown.

Distribution: Lesotho, South Africa.

Material examined (17 ♂): LESOTHO: 3 ♂ (paratypes), Mokhotlong River, Basutoland, 16.ii.1939, L. Bevis; 1 ♂, Likolobeng Mtn., Basutoland, 28.xii.1948,



Figs 26–27. Male genitalia of *Atherimorpha bevisi*, dorsal and ventral views.



Figs 28–29. Male tergum 9, sternum 10 and cerci of *Atherimorpha bevisi*, dorsal and ventral views.

C. Jacot-Guillarmod. SOUTH AFRICA: *Cape Province*: 6 ♂, Naudes Nek, Barkly East Dist., Eastern Cape Prov., 2 350–2 525 m, 19.i. 1963, B & P. Stuckenberg; 7 ♂, Naudes Nek, Barkly East Dist., 8–9.i. 1979, J. Londt & B. Stuckenberg. Of 3 paratypes examined, 2 are damaged and have no heads.

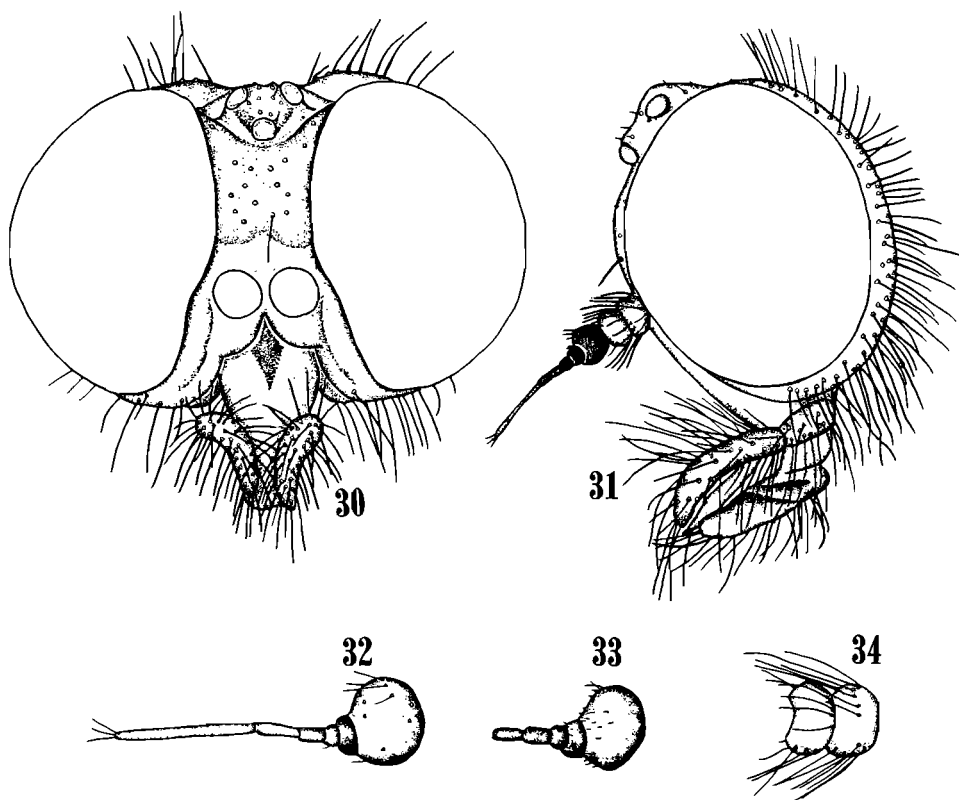
***Atherimorpha crassitibia* sp. n.**

Figs 30–41

This species (whose female is unknown) is easily separated from the other South African species by having the fore tibia swollen and nearly as wide as fore femur, and wing with several darkened parts as shown in the key (couplet 4).

Male: Dark brown; halter pale brown; femora, tibiae and basitarsi may have yellowish brown to brown tinge; abdomen pale pilose; front at median ocellus 1,4–1,6 times width of ocellar triangle.

Head (Figs 30–34): Dark brown to black, and pale gray pollinose; front (excepting above antenna), ocellar triangle, vertex, upper occiput (excepting cerebrale), antennal segments 1–2 with strong black setae; dorsal base of antennal segment 3 with some black setae which are short and inconspicuous; lower occiput, cheek



Figs 30–34. *Atherimorpha crassitibia*, male. 30–31, Head, Direct frontal view and lateral view; 32, antennal segment 3 and style, inner view; 33, antennal segment 3 and part of style, outer view; 34, antennas segments 1–2, outer view.

and proboscis with pale pile; palpus with setae which are either chiefly pale or chiefly black; width of one eye at greatest point from a direct frontal view 1,6 times distance from antenna to median ocellus, 0,8–0,9 times width of face at lowest portion from a direct frontal view and 1,8–2,0 times width of front just above antenna; width of front at median ocellus 1,0–1,1 times that just above antenna, 1,1–1,2 times that at narrowest point and 1,4–1,6 times width of ocellar triangle; ocellar triangle as wide as long; space between antennae 0,13–0,14 times width of ocellar triangle; distance from antenna to ventral base of palpus 1,7–1,8 times that from antenna to median ocellus, which is 1,7 times length of ocellar triangle; clypeus 3,1–3,3 times as wide as parafacials on a mid line; antenna 2,1–2,2 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style (excepting terminal seta) (along mid inner surface) 100 : 100 : 133(100–167) : 567(567) and their relative thicknesses 139(133–150) : 139(133–150) : 167(167) : 67(67); antennal style 5-segmented and 1,5–1,9 times as long as antennal segments 1–3; last segment of antennal style 0,6 times as long as antennal style; palpus as long as distance from antenna to ventral base of palpus; data based on 3 specimens.

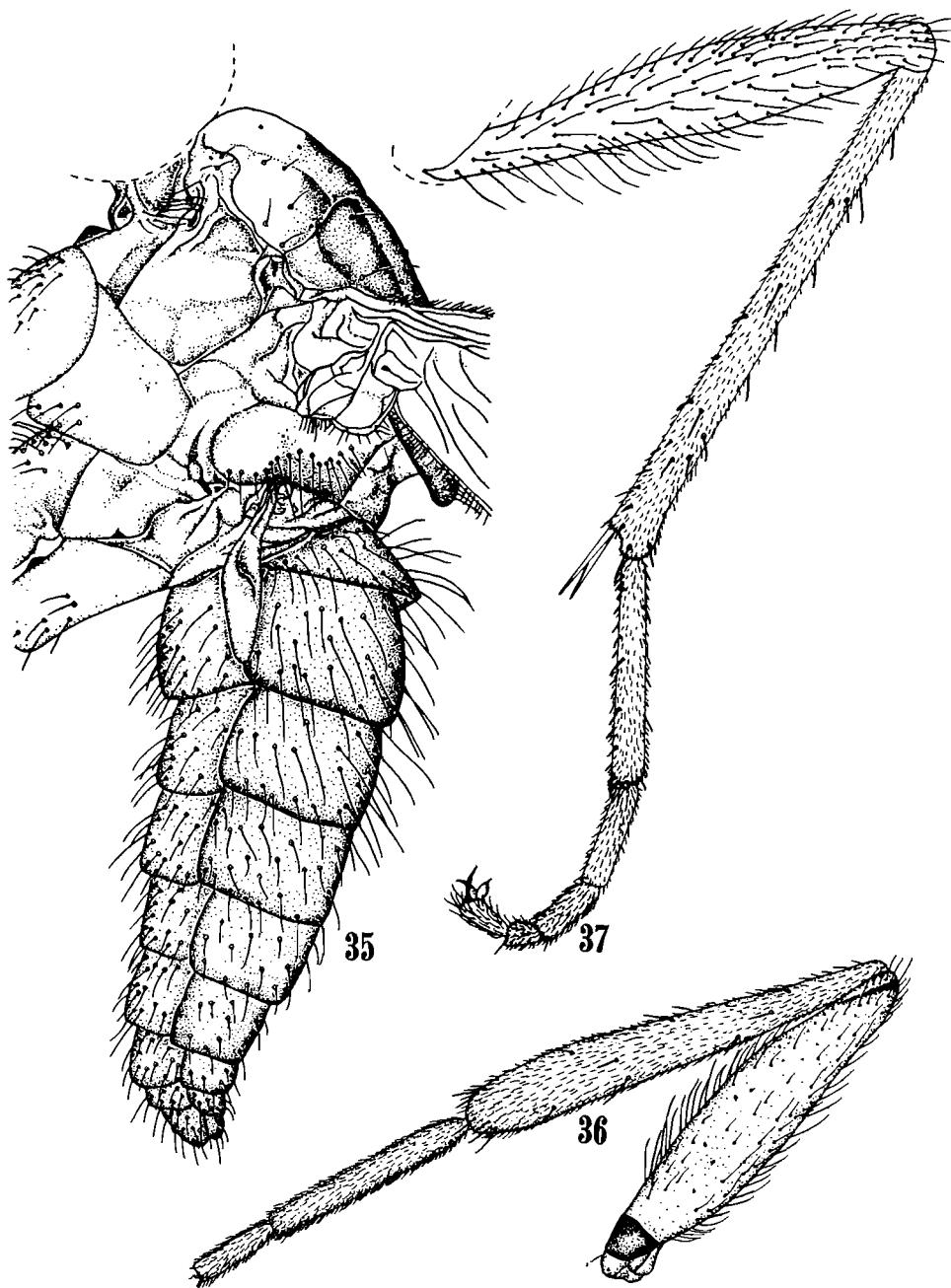
Thorax: Dark brown, pale gray pollinose, and with brown tinge around base of wing; mesonotum with several darker stripes; mesonotum and scutellum with strong black setae; pro-, meta-, and lower portion of sternopleura with pale pile which is longer on metapleura; metapleural pile over 1/2 major axis of metapleuron in length of row.

Wing: Membrane brown fumose and grayish; stigma, areas along base of vein R₄, m crossvein, m-cu crossvein darkened; stigma ending at or near apex of vein R₁; veins dark brown; A 1,8–1,9 times as long as B, which is 1,0–1,1 times as long as C; E 0,8–0,9 times as long as C and 3,2–3,8 times as long as D; F 0,2 times as long as D; Y 0,4–0,5 times as long as X and 0,8–1,1 times as long as Z; major axis of axillary 3,5–3,8 times as long as its minor axis; data based on 3 specimens; halter pale brown.

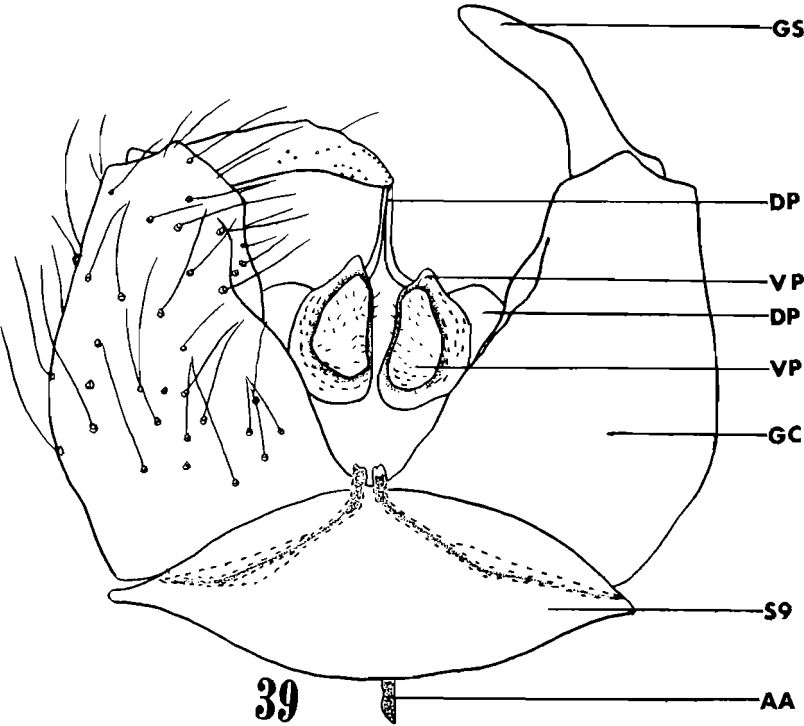
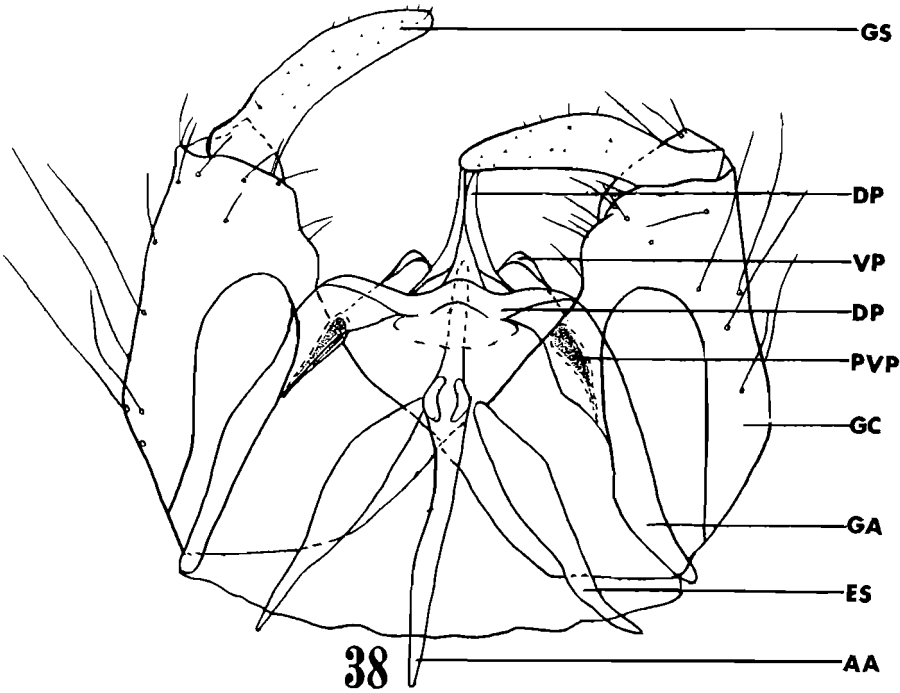
Legs (Figs 36–37): Dark brown, and femora, tibiae and basitarsi with yellowish brown to brown tinge; coxae and femora with pale pile, and apical portion (excepting ventral surface) of the latter with short recumbent black setae; tibial black setae distinct, but shorter than thicknesses of tibiae; fore tibia swollen and nearly as wide as femur; relative lengths of segments (excluding coxa and trochanter) of fore leg 177(176–179) : 230(226–232) : 100 : 45(44–46) : 34(32–36) : 22(21–23) : 28(26–29), of mid leg 179(177–182) : 242(238–250) : 96(94–100) : 43(42–44) : 29(29) : 16(14–18) : 25(24–26), of hind leg 231(224–239) : 303(297–307) : 118(114–123) : 52(50–53) : 34(32–35) : 18(18–19) : 27(26–29); in fore leg from the side, relative widths of femur, tibia and tarsomere 1, 44(41–50) : 36(35–39) : 16(15–18); in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 44(42–47) : 22(21–23) : 16(15–16) : 13(13–14) : 13(13–14); (N = 3).

Abdomen (Fig. 35): Dark brown to black, and pale gray pollinose; above and below clothed with pale pile which becomes black on gonocoxites.

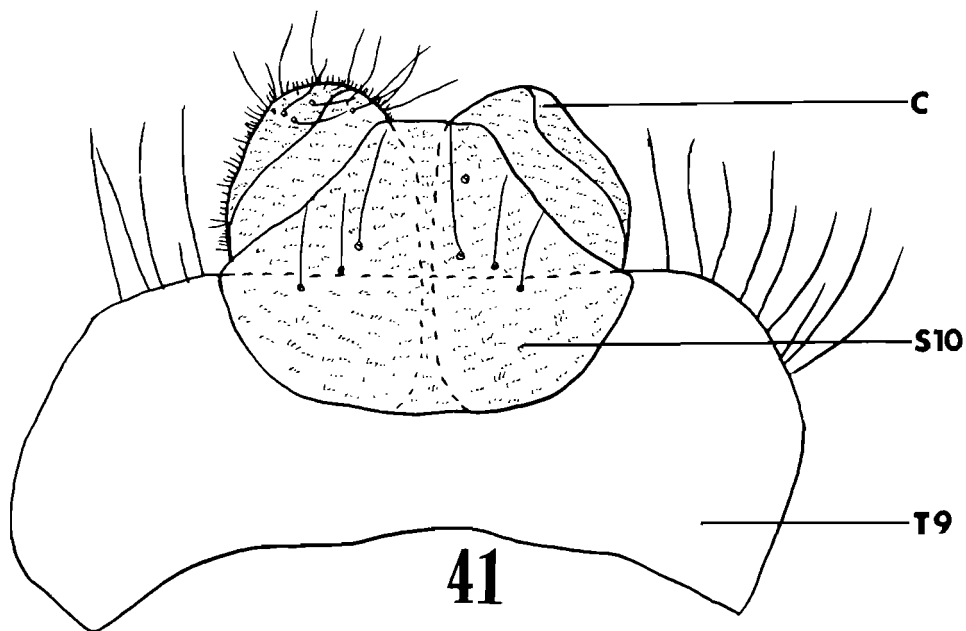
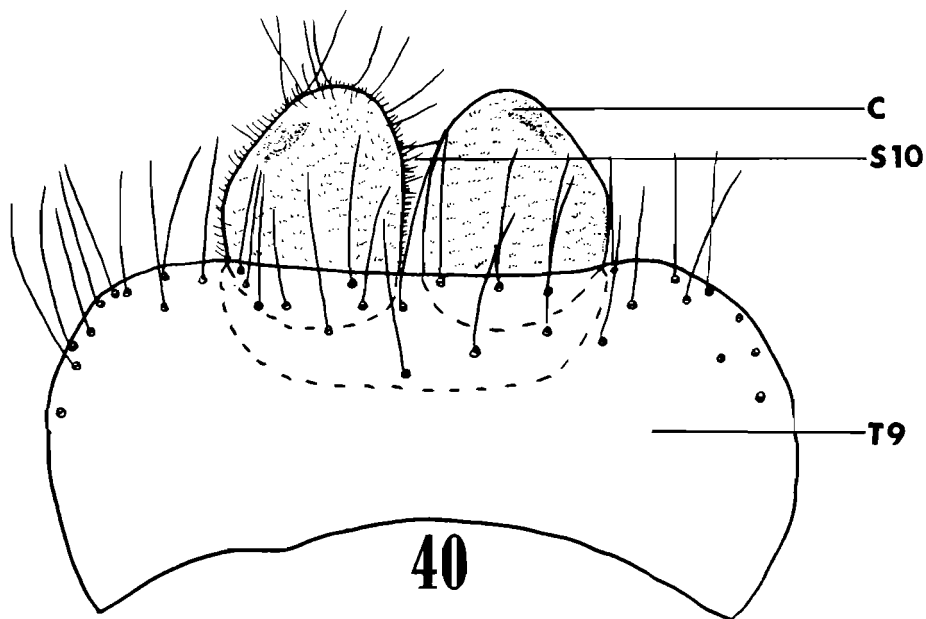
Genitalia (Figs 38–41): Similar to *bevisi*, except as follows: in dorsal plate, angle between basal part and mid-protruded part may be more gentle; ventral



Figs 35-37. *Atherimorpha crassitibia*, male. 35, Thorax and abdomen, lateral view; 36, fore femur, tibia, and tarsomeres 1-2, posterior view; 37, hind leg, anterior view.



Figs 38–39. Male genitalia of *Atherimorpha crassitibia*, dorsal and ventral views.



Figs 40–41. Male tergum 9, sternum 10 and cerci of *Atherimorpha crassitibia*, dorsal and ventral views.

plate with inner, minute setose, transparent portion larger in relation to size of ventral plate than in *bevisi*; sternum 9 wider than in *bevisi*; tergum 9 shorter and wider than in *bevisi*, and setose area is more confined to posterior border. The male genitalia of *crassitibia* are almost identical with those of *mensaemontis* but may possibly be separated from the latter by having the sternum 10 narrower and setose area on tergum 9 more confined to posterior border.

Length: Body 4,2–4,8 mm; wing 5,0–5,9 mm; fore basitarsus 0,70–0,85 mm.

Female. Unknown.

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Natal*: Holotype ♂, Karkloof Forest, nr Rietvlei, 31.v.1977, I. Bampton. Paratypes 2 ♂, same data as holotype. Holotype and paratypes are deposited in Natal Museum, Pietermaritzburg, South Africa.

***Atherimorpha flavicorpus* sp. n.**

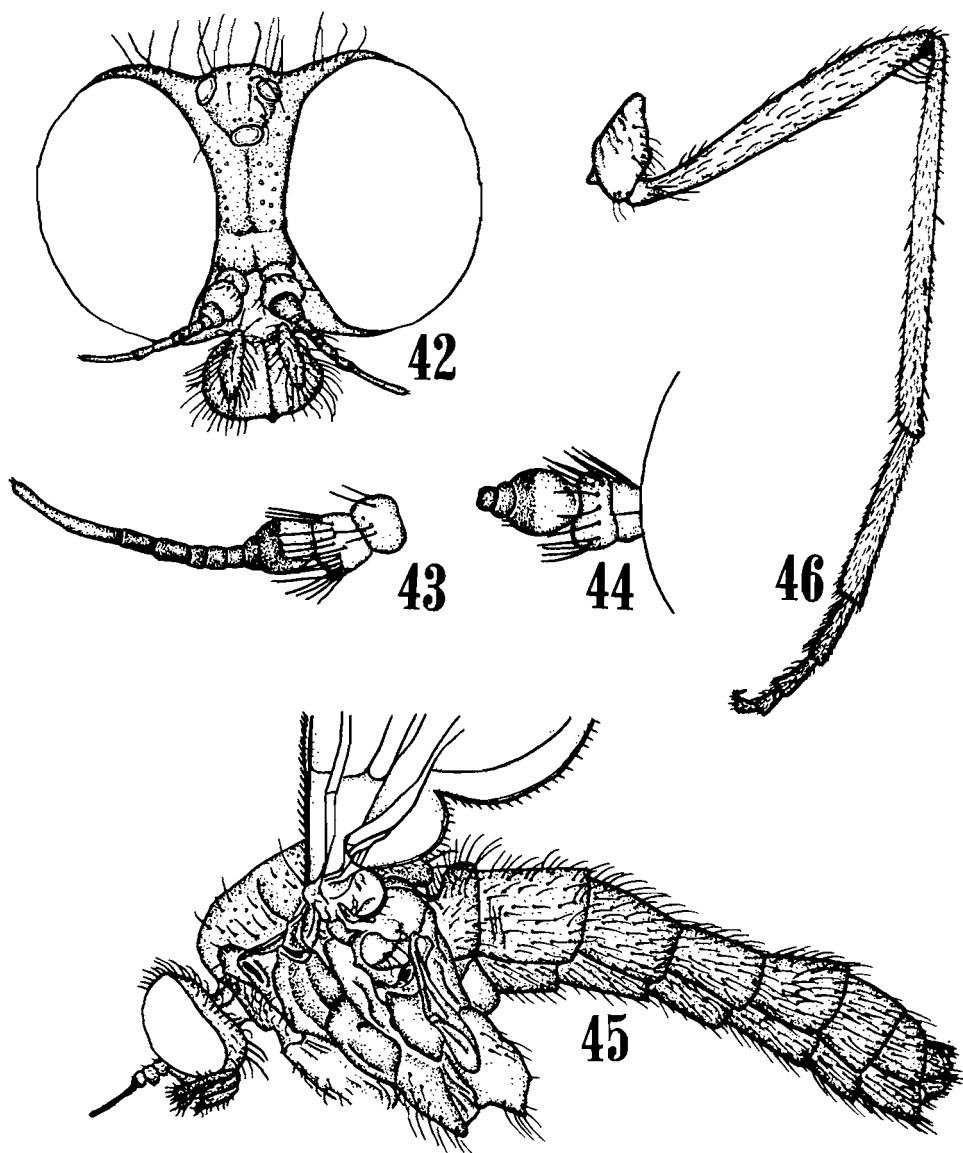
Figs 42–46

This species is similar to *ornata*, but may easily be separated from it as shown in the key (couplet 6).

Male: Thorax, abdomen, legs (except tarsi), halter, palpus, proboscis and antenna (except segment 3 and style) yellowish brown; abdomen pale pilose; front at median ocellus c. 1,2 times width of ocellar triangle.

Head (Figs 42–45): Dark brown to black, gray pollinose; antenna, palpus and proboscis yellowish brown, but in antenna style and apical portion of segment 3 darkened; front (except above antenna) ocellar triangle, vertex, upper occiput, antennal segments 1–2, palpus and proboscis with black setae which are shorter on antennal segments 1–2 and proboscis; lower occiput and cheek pale yellow pilose; width of one eye at greatest point 1,5 times distance from antenna to median ocellus, 1,1 times width of face at lowest portion from a direct frontal view, and 1,8 times width of front just above antenna; width of front at median ocellus 0,9 times that just above antenna. 1,2 times that at narrowest point, and 1,2 times width of ocellar triangle; ocellar triangle as wide as long; space between antennae 0,1 times width of ocellar triangle; distance from antenna to ventral base of palpus 1,5 times that from antenna to median ocellus, which is 1,5 times length of ocellar triangle; (widths of clypeus and parafacials not measured); antenna 2,2 times as long as distance from antenna to median ocellus; relative lengths of antenna segments 1, 2, 3 and style 63 : 100 : 125 : 550 and their relative thicknesses 125 : 138 : 125 : 50; antennal style 7-segmented and 1,9 times as long as antennal segments 1–3; last segment of antennal style 0,45 times as long as antennal style; palpus 0,9 times as long as distance from antenna to ventral base of palpus.

Thorax: Yellowish brown to brown, and gray pollinose; mesonotum with 3 narrow darker stripes; mesonotum and scutellum with black setae; pro- and metapleura pale yellow pilose; metapleural pile not less than 1/2 major axis of metapleuron in length of row.



Figs 42–46. *Atherimorpha flavicorpus*, male. 42, Head, direct frontal view; 43, antenna, dorsal view; 44, antennal segments 1–3 and part of style, outer view; 45, lateral view; 46, hind leg, anterior view.

Wing: Membrane brown fumose; stigma more or less darker and ending just beyond apex of vein R_1 ; veins brown to dark brown; A 2,3 times as long as B, which is as long as C; E 1,1 times as long as C and 4,1 times as long as D; F 0,1 times as long as D; Y 0,45 times as long as X and 1,3 times as long as Z; major axis of axillary 2,8 times as long as its minor axis; halter yellowish brown.

Legs (Fig. 46): Yellowish brown; tarsi especially toward apices darkened; coxae pale yellow pilose; femora with short recumbent black setae which become longer, pale and erect on ventral surfaces; tibial black setae shorter than thicknesses of tibiae; relative lengths of segments (excluding coxa and trochanter) of fore leg 133 : 200 : 100 : 39 : 28 : 17 : 19, of mid leg 143 : 220 : 91 : 33 : 20 : 13 : 17, of hind leg 185 : 246 : 104 : 41 : 28 : 15 : 19 and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 28 : 17 : 11 : 9 : 8.

Abdomen (Fig. 45): Yellowish brown; above and below with pale yellow pile which is longer on dorsum; setae on gonocoxites black.

Length: Body 6,8 mm; wing 7,0 mm; fore basitarsus 1,35 mm.

Female. Unknown.

Distribution: South Africa.

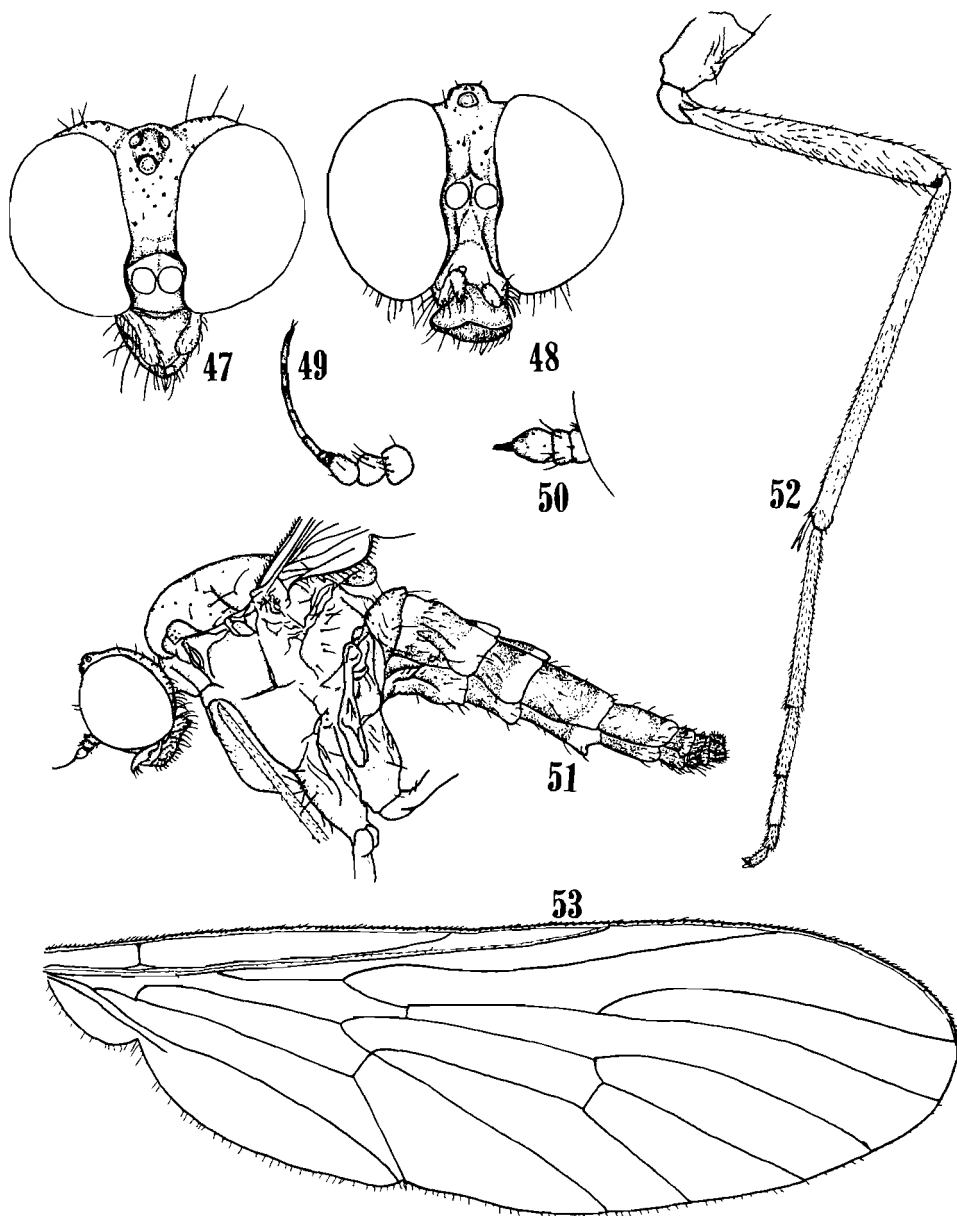
Material examined: SOUTH AFRICA: *Cape Province:* Holotype ♂, 8 km S Alexandria, Cape Prov., 3.xi.1978. 3326CD, (road & forest margin), R. Miller & J. Londt. Deposited in Natal Museum, Pietermaritzburg, South Africa.

***Atherimorpha gracilipennis* sp. n.**

Figs 47–53

This species (♀) may be characterised by having narrow wings. It is similar to *ornata* (♀), but may easily be separated from it by having the following characters: wing narrow; parafacials very narrow and clypeus c. 8 times as wide as parafacials. In *ornata* (♀), wing wider, and parafacials wider and clypeus 3–4 times as wide as parafacials.

Female. Head (Figs 47–51): Head except appendages dark brown to black, pale gray pollinose, and somewhat satiny; antenna, palpus and proboscis yellowish brown, but apical portion of antennal segment 3 darkened and antennal style blackened; front except just above antenna, ocellar triangle, vertex, upper occiput and antennal segments 1–2 with black setae which are shorter on antennal segments 1–2; lower occiput, cheek, palpus and proboscis with pale pile; width of one eye at greatest point from a direct frontal view 1,2 times distance from antenna to median ocellus, 2,3 times width of face at lowest portion from a direct frontal view, and 2,3 times width of front just above antenna; width of front at median ocellus 1,2 times that just above antenna, 1,6 times that at narrowest point, and 1,6 times width of ocellar triangle; ocellar triangle 0,9 times as wide as long; no space between antennae in specimen at hand; distance from antenna to ventral base of palpus 1,4 times that from antenna to median ocellus, which is 2,3 times length of ocellar triangle; clypeus about 8 times as wide as parafacials; antenna 1,7 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style 100 : 100 : 183 : 600 and their rela-



Figs 47–53. *Atherimorpha gracilipennis*, female. 47–48. Head, direct frontal view and anterior view; 49, right antenna, dorsal view; 50, left antenna, outer view; 51, lateral view; 52, hind leg, anterior view; 53, wing.

tive thicknesses 150 : 150 : 150 : 33; antennal style thin, indistinct in segmentation, probably 5–6 segmented, and 1,6 times as long as antennal segments 1–3; palpus 0,8 times as long as distance from antenna to ventral base of palpus.

Thorax: Yellowish brown, and pale gray pollinose; mesonotum may have 3 narrow darker stripes; mesonotum and scutellum with black setae; pro- and metapleura with pile which is pale on the former and black and longer on the latter; metapleural pile distinctly over 1/2 major axis of metapleuron in length of row.

Wing (Fig. 53): Membrane brown fumose; stigma yellowish brown and ending beyond apex of vein R₁; veins dark brown; A 1,7 times as long as B, which is as long as C; E 0,6 times as long as C and 3,7 times as long as D; F 0,2 times as long as D; Y 0,3 times as long as X and 0,9 times as long as Z; major axis of axillary 4,4 times as long as its minor axis; halter yellowish brown.

Legs (Fig. 52): Yellowish brown; tarsi darkened; coxae pale gray pollinose and with black setae; femora with short black setae; tibial black setae short; relative lengths of segments (excluding coxa and trochanter) of fore leg 102 : 167 : 100 : 42 : 32 : 16 : 16, of mid leg 112 : 193 : ? : ? : ? : ? : ?, of hind leg 146 : 218 : 105 : 40 : 26 : 14 : 14 and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 19 : 11 : 7 : 7 : 7.

Abdomen (Fig. 51): Yellowish brown; terga 2–5 except for posterior parts and sterna 2–4 except for posterior parts dark reddish brown; dorsum with chiefly black setae and venter pale pilose.

Length: Body 5,5 mm; wing 6,3 mm; fore basitarsus 1,5 mm.

Male. Unknown.

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Natal*: Holotype ♀, Eshowe (450 m), Dlinza Forest Nature Res., 2831CD, Natal, 27.vii.1980, R. Miller & P. Stabbins. Deposited in Natal Museum, Pietermaritzburg, South Africa.

***Atherimorpha irwini* sp. n.**

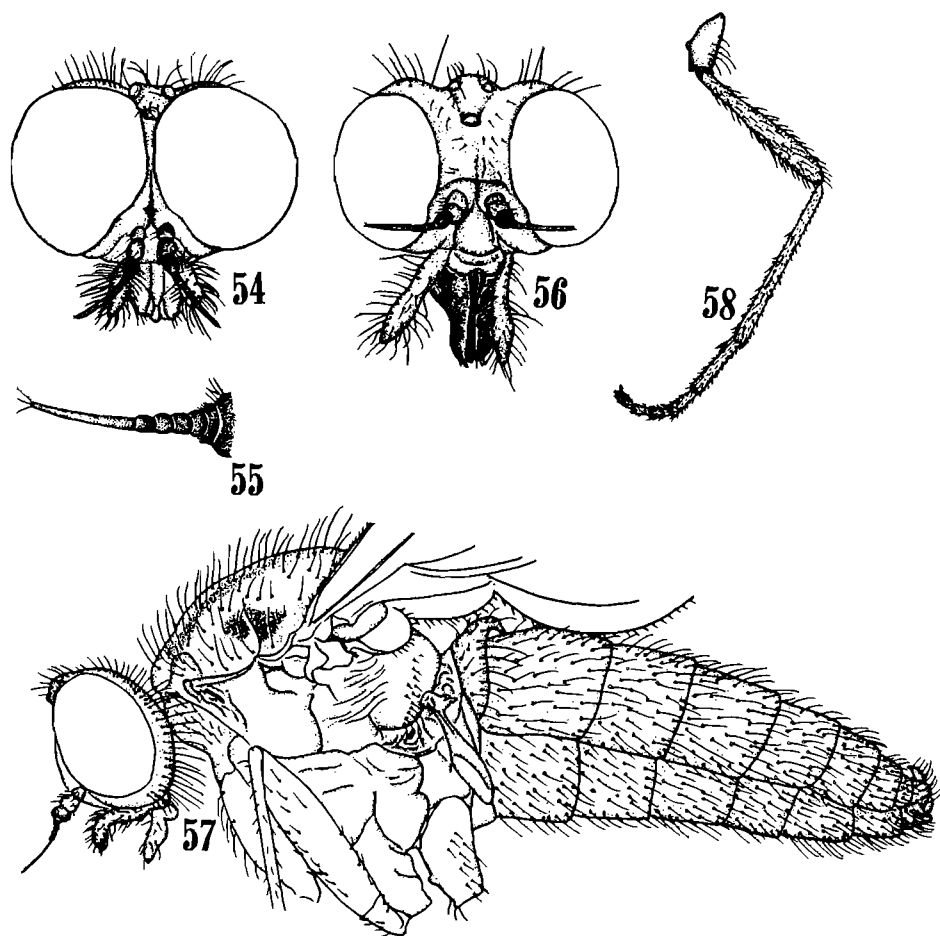
Figs 54–58

The male of this species is similar to that of *angustifrons*, but may easily be separated from it as shown in the key (couplet 2).

In both sexes, body dark brown to black, but palpus (except apex), halter, femora, tibiae, and basitarsi (except apical portions) yellowish brown; abdomen chiefly pale pilose; wing brown to dark brown, oily and not grayish; face wide.

Front at median ocellus c. 0,6 times in ♂ and c. 2,0 times in ♀ width of ocellar triangle; front in ♂ nearly contiguous.

Male. Head (Figs 54–55, 57): Dark brown to black, and pale gray pollinose; palpus yellowish brown, with apical portion darkened; ocellar triangle, vertex, upper occiput (excepting cerebrale), palpus (excepting base) and antennal segments 1–2 with strong black setae which are shorter on the last mentioned one; lower occiput, cheek, base of palpus, and proboscis with pale pile which is shorter on proboscis; width of one eye at greatest point from a direct frontal view 1,4



Figs 54–58. *Atherimorpha irwini*. 54, Male head, direct frontal view; 55, male antennal style (including apex of antennal segment 3), inner view; 56, female head, direct frontal view; 57, male, lateral view; 58, male hind leg, anterior view.

times distance from antenna to median ocellus, 0,9 times width of face at lowest portion from a direct frontal view, and 2,0 times width of front just above antenna; width of front at median ocellus 0,4 times that just above antenna, 5,0 times that at narrowest point, and 0,6 times width of ocellar triangle; ocellar triangle as wide as long; space between antennae 0,17 times width of ocellar triangle; distance from antenna to ventral base of palpus 1,2 times that from antenna to median ocellus, which is 2,0 times length of ocellar triangle; (widths of clypeus and parafacials not measured); antenna 1,5 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style 86 : 100 : 114 : 486 and their relative thicknesses 143 : 157 : 157 : 86; antennal style 5-segmented and 1,6 times as long as antennal segments 1–3; last segment of antennal style 0,6 times as long as antennal style; palpus 1,1 times as long as distance from antenna to ventral base of palpus.

Thorax: Dark brown to black, and pale gray pollinose; mesonotum with 3 darker stripes; areas before and behind suture may be darkened; mesonotum and scutellum with strong black setae; pro-, meta- and lower portion of sternopleura with pale pile which is longer on metapleura; metapleural pile about 1/2 major axis of metapleuron in length of row.

Wing: Membrane evenly stained with brown to dark brown; stigma darker and ending at apex of vein R_1 ; veins dark brown to black; A 2,0 times long as B, which is 1,1 times as long as C; E as long as C and 3,4 times as long as D; anal cell closed; Y 0,4 times as long as X and equal in length to Z; major axis of axillary 2,7 times as long as its minor axis; halter yellowish brown.

Legs (Fig. 58): Coxae and trochanters dark brown to black, and pale gray pollinose; femora, tibiae and tarsi yellowish brown, but tarsomeres 2–5 and apex of tarsomere 1 darkened; coxae pale pilose and femora chiefly black haired; tibial black setae much shorter than thicknesses of tibiae; relative lengths of segments (excluding coxa and trochanter) of fore leg 168 : 206 : 100 : 45 : 35 : 26 : 32, of mid leg 177 : 223 : 94 : 42 : 32 : 19 : 29, of hind leg 229 : 287 : 106 : 52 : 32 : 23 : 29 and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 35 : 23 : 15 : 13 : 13.

Abdomen (Fig. 57): Dark brown to black, and pale gray pollinose; above and below with pale or pale yellow pile which becomes black on terga 6–7, gonocoxites, and middle of terga 2–5; hairs are longer on sides of terga 1–5.

Length: Body 5,3 mm; wing 5,2 mm; fore basitarsus 0,78 mm.

Female (Fig. 56): Similar to male except as follows: Head: Front (excepting lower part) with black hairs; width of one eye at greatest point from a direct frontal view 1,3 times width of front just above antenna; width of front at median ocellus 1,1 times that just above antenna, 1,2 times that at narrowest point, and 2,0 times width of ocellar triangle; distance from antenna to ventral base of palpus 1,6 times that from antenna to median ocellus, which is 1,6 times length of ocellar triangle; in 1 specimen measured, width of one eye at greatest point 0,7 times width of face at lowest portion from a direct frontal view; ocellar triangle 0,9 times as wide as long; space between antennae 0,25 times width of ocellar triangle; antenna 1,8 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style 67 : 100 : 133 : 533 and their relative thicknesses 167 : 167 : 167 : 67; antennal style 1,8 times as long as antennal segments 1–3; palpus as long as distance from antenna to ventral base of palpus.

Thorax: As in male.

Wing: Stigma not distinctly marked (this may be so in ♂); A 2,1 times as long as B, which is 1,1 times as long as C; E as long as C and 2,9 times as long as D; F 0,1 times as long as D; Y 0,45 times as long as X and 1,3 times as long as Z; major axis of axillary 2,6 times as long as its minor axis.

Legs: Relative lengths of segments of fore leg 153 : 200 : 100 : 42 : 33 : 22 : 25, of mid leg 167 : 214 : 92 : 39 : 28 : 17 : 22, of hind leg 217 : 269 : 97 : 47 : 33 : 19 : 25 and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–2, 33 : 22 : 14 : 14 : 13.

Abdomen: Pile on segment 8 and cerci pale in colour.

Length: Body 5,8 mm; wing 5,8 mm; fore basitarsus 0,90 mm.

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Cape Province*: Holotype ♂, Springbok, Messelpadpas, 25 mi. SSW., Cape Prov., 7.ix.1972 (1,100 ft; 2917DC at stream seepage), M. E. Irwin. Paratype ♀, same data as holotype. Holotype and paratype deposited in Natal Museum, Pietermaritzburg, South Africa.

Atherimorpha latipennis Stuckenberg

Fig. 59

Atherimorpha latipennis Stuckenberg, 1956a: 144. Type locality: South Africa (Basutoland).

This species was described on the basis of 1 ♂ whose antennal segment 3 and style are lacking. Judging from the original description and appended figure, *latipennis* is very similar to *longicornu*, but may be separated from it as shown in the key (couplet 8).

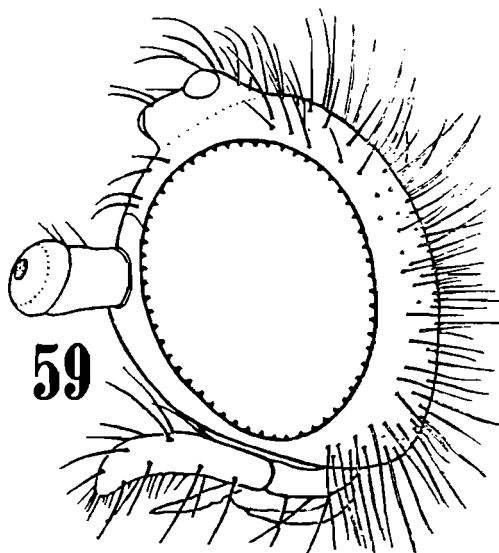


Fig. 59. Male head of *Atherimorpha latipennis*, lateral view (from Stuckenberg, 1956a).

'Male. – Length 6,8 mm, wing 7,4 mm'; female unknown.

Distribution: Lesotho.

Holotype, '♂, Basutoland: near Sani Pass (on Natal border), 25.xii.1938 (L. Bevis). In the Durban Museum.'

Atherimorpha longicornu sp. n.

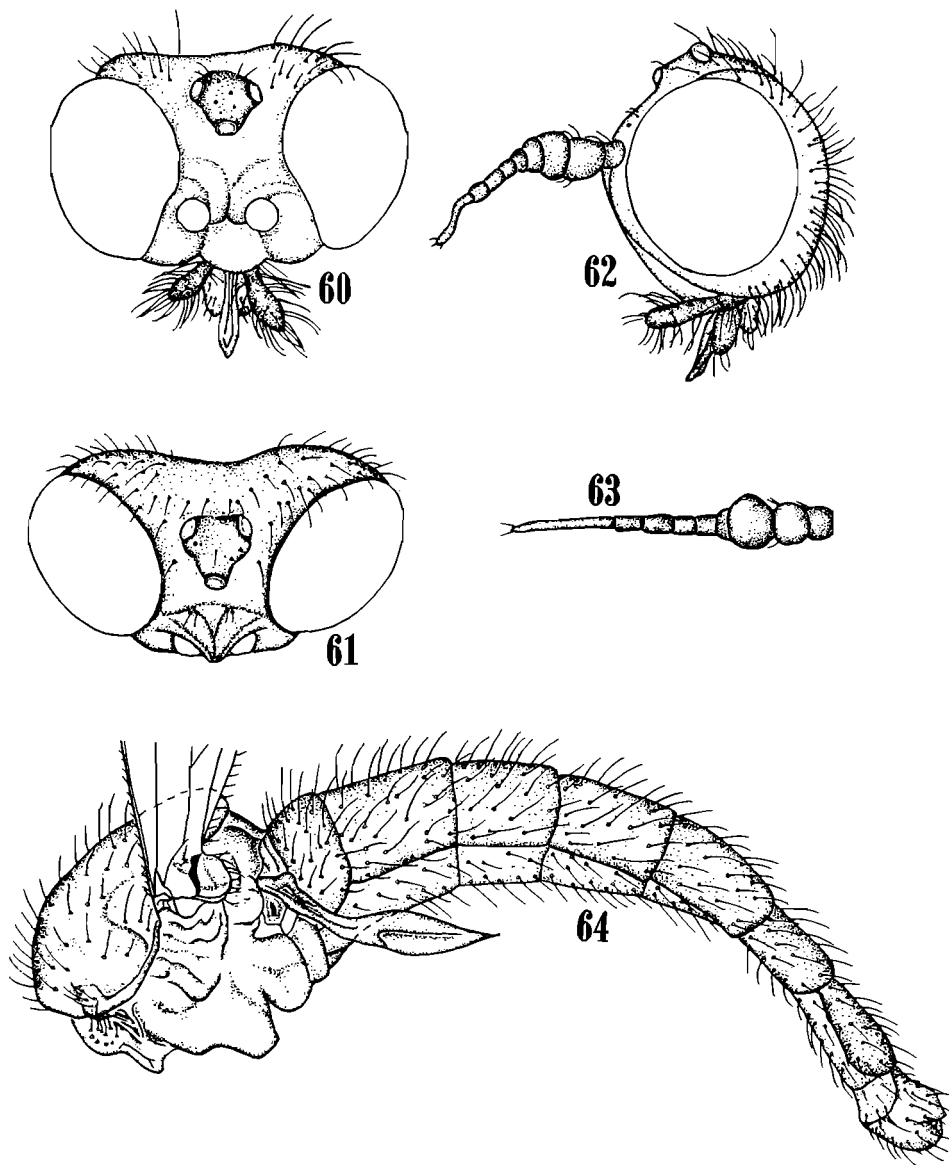
Figs 60–70

In this species, antenna and abdomen long, but front and palpus short.

This species is similar to *latipennis* but may be separated from it as shown in the key (couplet 8).

Male: Dark brown to black; legs brown to dark brown; abdomen pale pilose; front at median ocellus 1,3–1,6 times width of ocellar triangle; face wide.

Head (Figs 60–63): Dark brown to black, and pale gray pollinose; ocellar triangle, vertex and upper occiput with black setae; occiput (except upper part), cheek, palpus and proboscis with pale pile; antennal segments 1–2 with short, inconspicuous black setae; often front may have some short black setae; width of one



Figs 60–64. *Atherimorpha longicornu*, male. 60–62, Head, direct frontal view, dorsal view, and lateral view; 63, antenna, inner view; 64, thorax and abdomen, lateral view.

eye at greatest point from a direct frontal view 1,9–2,5 times distance from antenna to median ocellus, 0,7–0,8 times width of face at lowest portion from a direct frontal view, and 1,0–1,1 times width of front just above antenna; width of front at median ocellus 0,8–0,9 times that just above antenna, 1,1 times that at narrowest point, and 1,3–1,6 times width of ocellar triangle; ocellar triangle 1,0–1,2 times as wide as long; space between antennae 0,3–0,4 times width of ocellar triangle; distance from antenna to ventral base of palpus 2,7–3,5 times that from antenna to median ocellus, which is 0,75–1,0 times length of ocellar triangle; clypeus 1,7–2,0 times as wide as parafacials; antenna 4,3–5,7 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style (along mid inner surface) 97 (83–100) : 100 : 130(100–133) : 718(667–800) and their relative thicknesses 122(100–133) : 147(133–167) : 157(133–183) : 97(83–117); antennal style 6-segmented and 1,8–2,4 times as long as antennal segments 1–3; last segment of antennal style 0,4–0,5 times as long as antennal style; palpus 0,5–0,6 times as long as distance from antenna to ventral base of palpus; data based on 10 specimens.

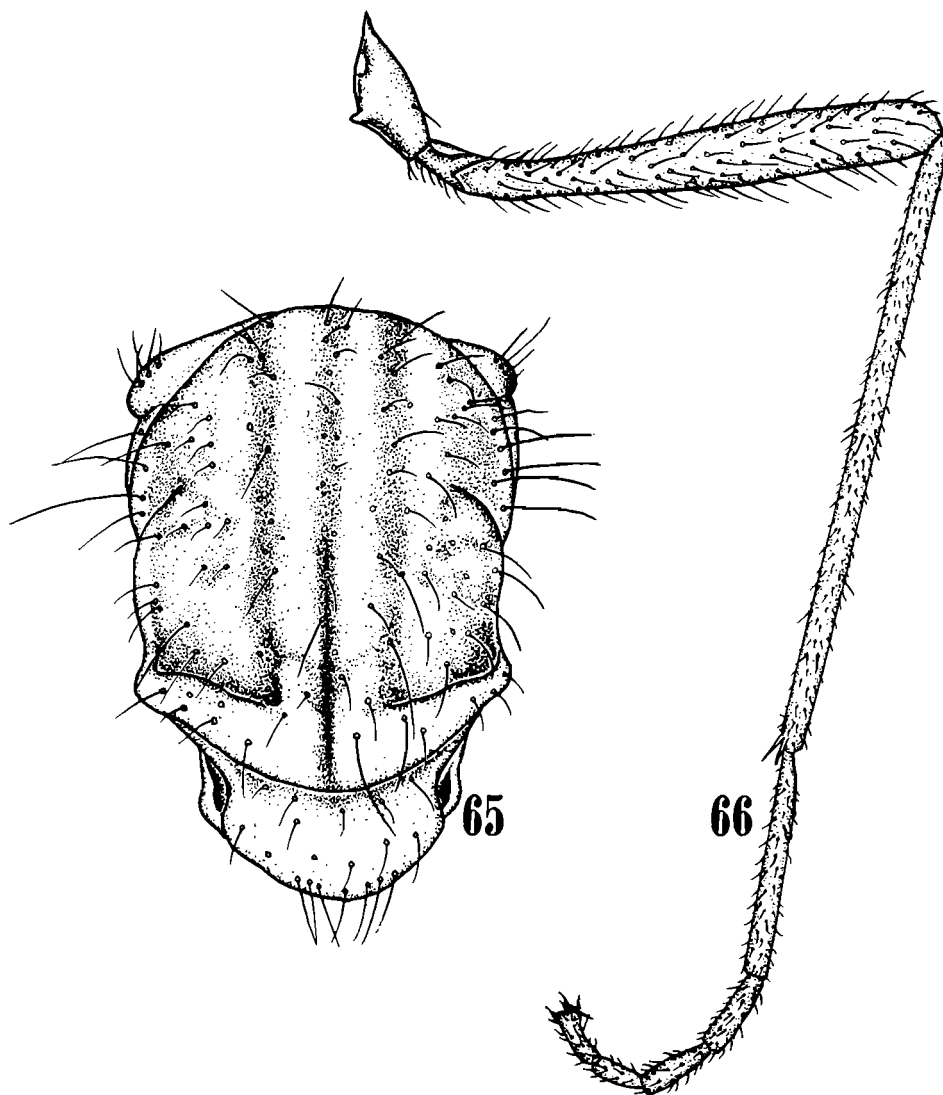
Thorax (Fig. 65): Dark brown to black, and pale gray pollinose; besides 3 narrow darker stripes, lateral part of mesonotum (except borders and along transverse suture) darkened; mesonotum with black setae which change into pale on posterior part; scutellum, and pro- and metapleura with pale pile; metapleural pile short in length of row which is less than 1/2 major axis of metapleuron.

Wing: Membrane tinged with brown and grayish; stigma slightly darker; A 1,6–2,2 times as long as B, which is 0,9–1,1 times as long as C; E 0,8–1,1 times as long as C and 3,2–4,2 times as long as D; F 0,03–0,50 times as long as D; Y 0,5–0,6 times as long as X and 1,0–1,3 times as long as Z; major axis of axillary 3,4–3,8 times its minor axis; data based on 10 specimens; halter dark brown, but stem (except base) somewhat paler; halter pale gray pollinose.

Legs (Fig. 66): Brown to dark brown; coxae and femora pale gray pollinose and pale pilose; tibial black setae short and inconspicuous; relative lengths of segments (excluding coxa and trochanter) of fore leg 175(162–185) : 249(233–270) : 100 : 49(45–55) : 38(36–41) : 25(23–27) : 37(35–40), of mid leg 181(167–191) : 257(243–275) : 92 (90–96) : 47(41–55) : 34(30–36) : 20(18–23) : 33(30–35), of hind leg 256(238–275) : 333(243–352) : 115(110–120) : 59(50–65) : 43(38–45) : 25(23–27) : 36(33–40) and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 34(31–35) : 23(20–25) : 15(14–16) : 14(13–15): 14(13–15); (N = 10).

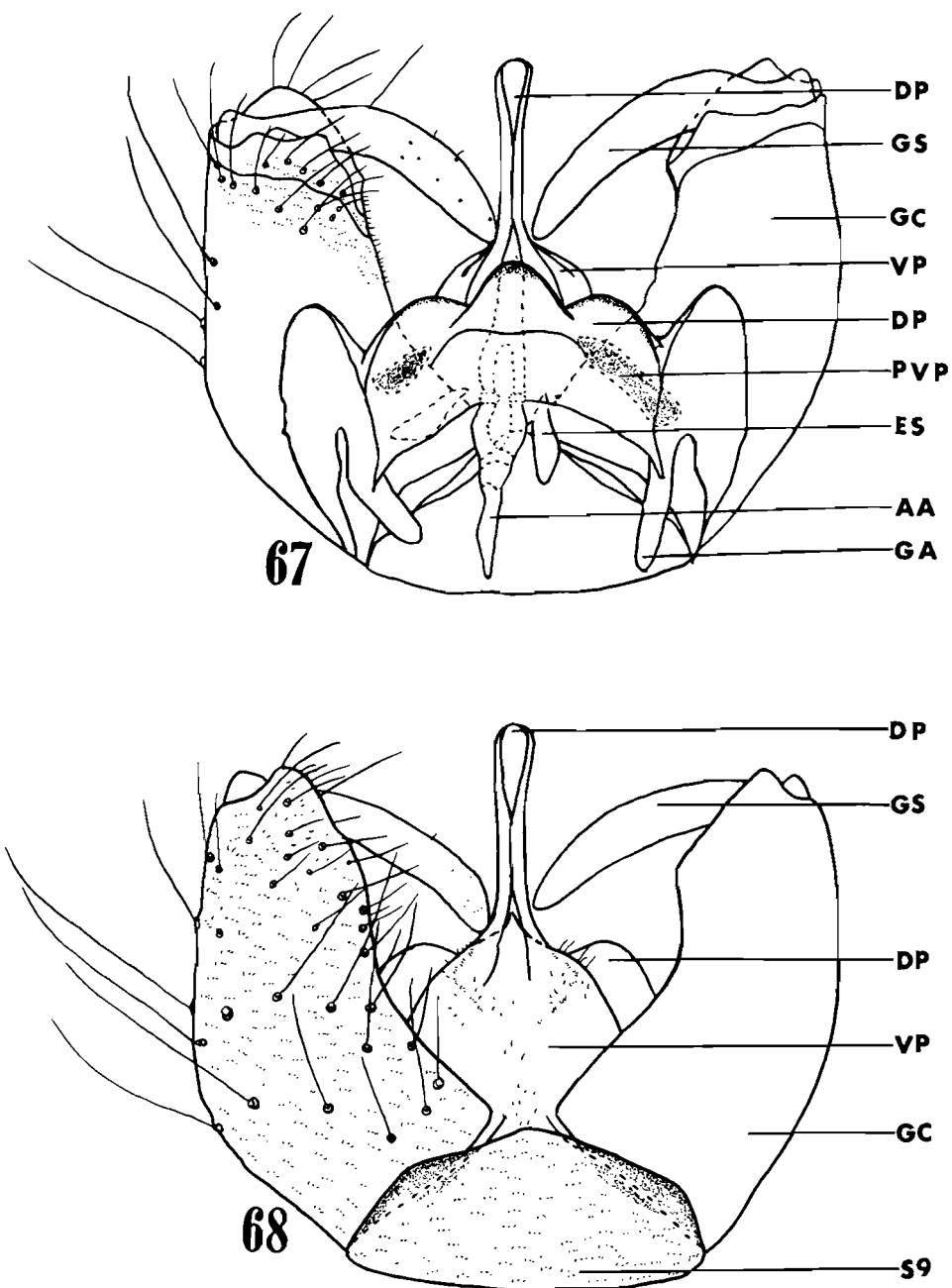
Abdomen: Dark brown to black, and pale gray pollinose; above and below with pale pile which is longer on dorsum.

Genitalia (Figs 67–70): Gonostylus cylindrical, with apex bluntly pointed, with outer margin gently convex, with inner margin gently concave, and with minute setae; paired gonocoxites about as wide as long; each gonocoxite elongate, bluntly pointed at ventral apex, and with strong setae on ventral surface (except base) and apical portion of dorsal surface; in dorsal plate, basal wide part making an obtuse angle with long mid-protruded part; basal part of dorsal plate swollen at posterolateral margin; ventral plate onion-shaped, and mostly colorless; it appears

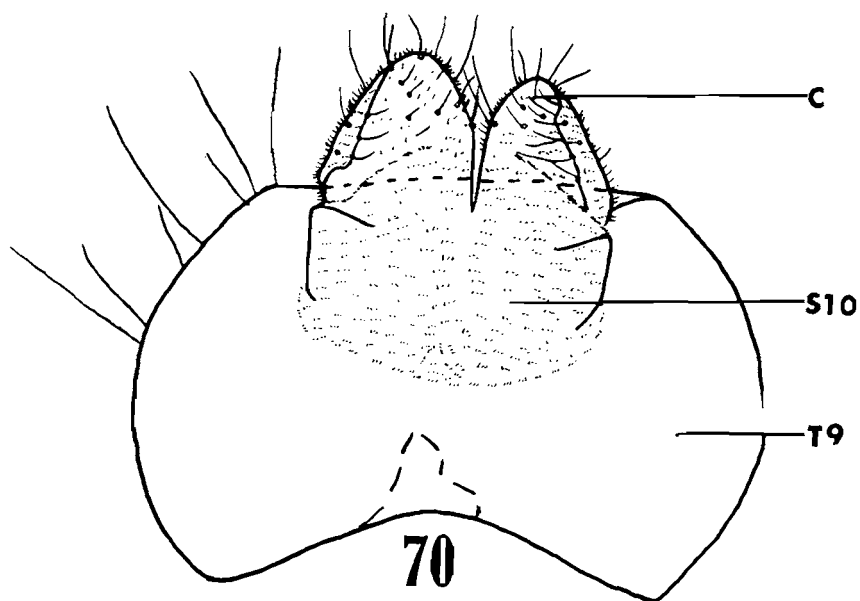
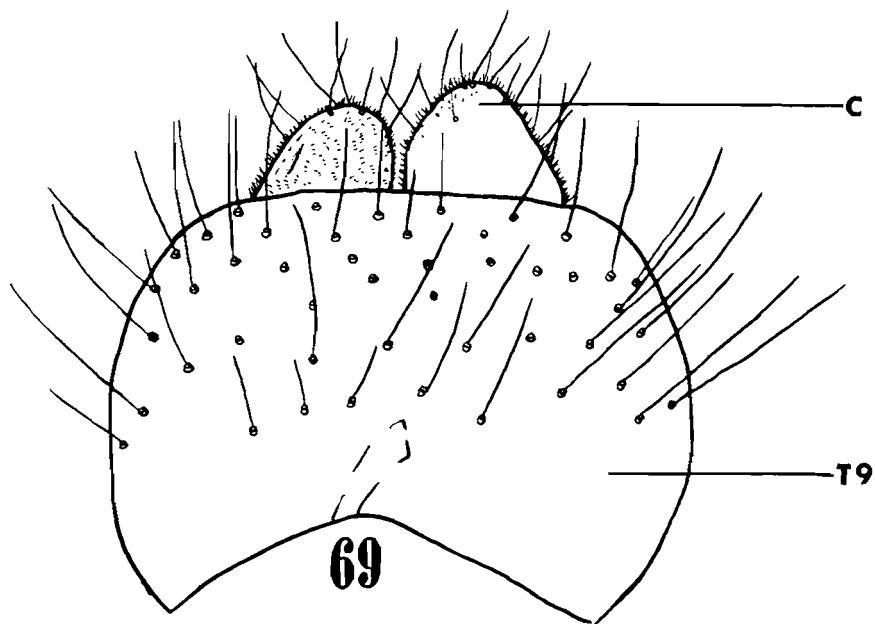


Figs 65–66. *Atherimorpha longicornu*, male. 65, Mesonotum and scutellum, dorsal view; 66 hind leg, anterior view.

that ventral plate is divided in the mid line, and apex of ventral plate is protruded and connected with mid-protruded part of dorsal plate; ventral plate except basal portion with minute setae; anterior bar of aedeagus short and flattened laterally in dorsal view; endophallic sclerite short and elliptic; gonocoxal apodeme long; sternum 9 rather semicircular, much wider than long and than gonocoxite; tergum 9 rather rectangular, wider than long, with anterior margin shallowly concave, and with strong setae on posterior part; each cercus elliptical or rather rectangular, longer than wide, and somewhat shorter than tergum 9; sternum 10 rather pentagonal, and about as wide as long. Specimens dissected: 2 ♂, Royal Natal



Figs 67–68. Male genitalia of *Atherimorpha longicornu*, dorsal and ventral views.



Figs 69–70. Male tergum 9, sternum 10 and cerci of *Atherimorpha longicornu*, dorsal and ventral views.

National Park, Drakensberg Mts. (from grassland; 1,500 m), 14.ix.1963, B. & P. Stuckenberg.

Length: Body 3,8–5,3 mm; wing 4,1–5,8 mm; fore basitarsus 0,45–0,60 mm.

Female. Unknown.

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Natal*: Holotype ♂, Royal Natal National Park, Drakensberg Mts. (from grassland; 1,500 m). 14.ix.1963, B. and P. Stuckenberg. Paratypes: 38 ♂, same data as holotype (18 ♂, 1,530 m; 2 ♂, 12.ix.1963, from river bank, 1,500 m). Holotype and paratypes are deposited in Natal Museum, Pietermaritzburg, South Africa. Some paratypes are retained in Kagoshima University, Kagoshima, Japan.

Atherimorpha mensaemontis Stuckenberg

Figs 71–78

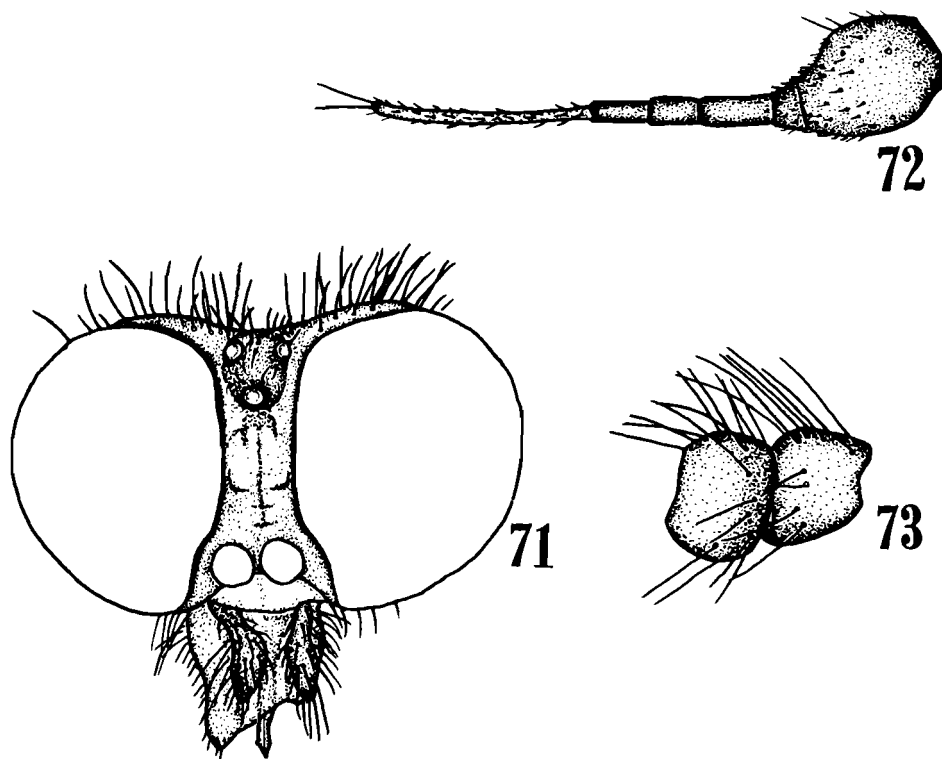
Atherimorpha mensaemontis Stuckenberg, 1961: 116. Type locality: South Africa (Cape Peninsula).

This species is similar to *flavicorpus* and *ornata* but may easily be separated from them as shown in the key (couplet 5).

Male: Thorax, abdomen, legs, halter, antenna (except style), palpus and proboscis reddish (or yellowish) brown; abdomen stiff black setose; front at median ocellus 1,3–1,4 times width of ocellar triangle; abdomen shorter and 1,0–1,4 times as long as head and thorax combined.

Female (after Stuckenberg 1961): Similar to male, but front 'broader, slightly divergent towards ocelli, at its narrowest 0,22 of greatest transverse width of head'; setae on abdomen 'much weaker than in ♂.'

Male. Head (Figs 71–73): Head except appendages dark brown to black, somewhat sooty, and heavily white gray pollinose; antenna, palpus and proboscis reddish (or yellowish) brown to brown; antenna or antennal style may be darker than palpus and proboscis; ocellar triangle, vertex, upper occiput, antennal segments 1–2 and palpus with stiff black setae which are shorter on antennal segments 1–2; lower occiput, cheek, base of palpus, and proboscis with pale pile which is shorter on proboscis; width of one eye at greatest point from a direct frontal view 1,4–1,6 times distance from antenna to median ocellus, 1,1–1,2 times width of face at lowest portion from a direct frontal view, and 2,0–2,3 times width of front just above antenna; width of front at median ocellus 0,8–1,0 times that just above antenna, 1,1–1,4 times that at narrowest point, and 1,3–1,4 times width of ocellar triangle; ocellar triangle 0,9–1,0 times as wide as long; space between antennae 0,1–0,3 times width of ocellar triangle; distance from antenna to ventral base of palpus 1,3–1,4 times that from antenna to median ocellus, which is 2,1–2,3 times length of ocellar triangle; clypeus 4 times as wide as parafacials; antenna 2,0–2,3 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style (along mid inner surface) 68(60–100) : 100 : 129(120–163) : 454(400–550) and their relative thicknesses 95(80–125) : 108(90–150) : 109(90–125) : 52 (50–60); antennal style 5-segmented and 1,4–1,6 times as long as antennal segments 1–3; last segment of antennal style



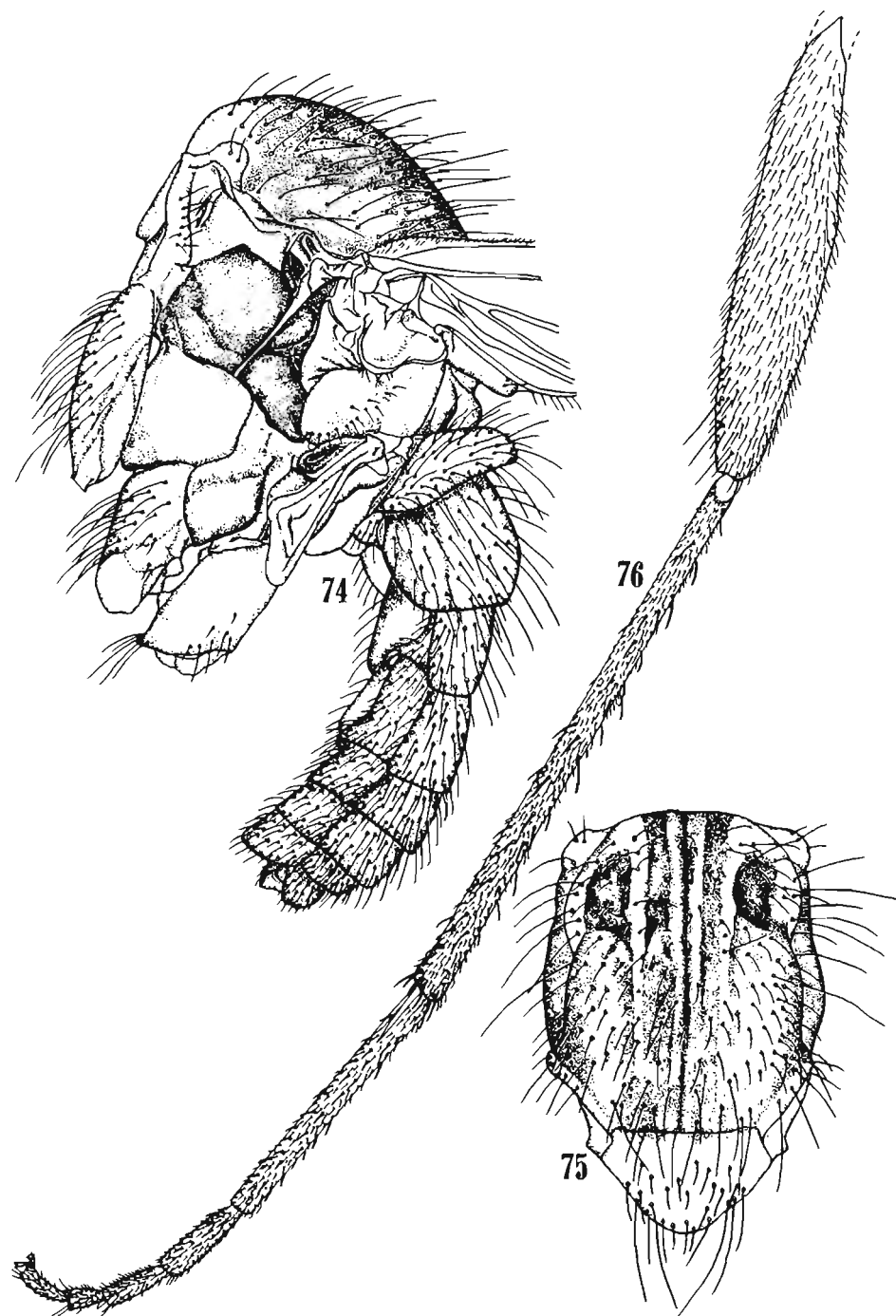
Figs 71–73. *Atherimorpha mensaemontis*, male. 71. Head, direct frontal view; 72, antennal segment 3 and style, inner view; 73, antennal segments 1–2, outer view.

0,5–0,6 times as long as antennal style; palpus 1,0–1,2 times as long as distance from antenna to ventral base of palpus; data based on 5 specimens.

Thorax (Fig. 75): Reddish (or yellowish) brown to brown, and more or less white gray pollinose; mesonotum has 3 narrow blackened vittae and may have one broad median stripe (containing 3 narrow vittae mentioned above), and 2 broad, lateral, more or less darker stripes which often disappear; mesonotum, scutellum, pro- and metapleura with stiff black setae which are shorter on propleura; propleura with pale pile also; metapleural pile distinctly over 1/2 major axis of metapleuron in length of row.

Wing: Membrane brown fumose; stigma more or less yellowish brown and ending just beyond apex of vein R_1 ; veins brown to dark brown; A 2,0–2,5 times as long as B, which is 1,0–1,1 times as long as C; E 1,0–1,1 times as long as C and 3,7–4,0 times as long as D; F 0–0,2 times as long as D; Y 0,5 times as long as X and 1,4–1,5 times as long as Z; major axis of axillary 3,8–4,0 times as long as its minor axis; (N = 5); halter yellowish brown.

Legs (Fig. 76): Yellowish brown; tarsi more or less darker; coxae more or less white gray pollinose and with black stiff setae; femora with shorter black, chiefly recumbent setae; tibial black setae distinct, but shorter than thicknesses of tibiae; relative lengths of segments (excluding coxa and trochanter) of fore leg



Figs 74–76. *Atherimorpha mensaemontis*, male. 74, Thorax and abdomen, lateral view; 75, mesonotum and scutellum, dorsal view; 76, hind leg, anterior view.

140(139–141) : 200(193–207) : 100 : 41(41–42) : 29(28–30) : 16(15–17) : 22(20–24), of mid leg 156(154–159) : 226(216–233) : 95(90–98) : 40(37–42) : 25(22–27) : 12(11–13) : 20(18–20), of hind leg 199(188–207) : 284(267–307) : 116(110–120) : 51(47–54) : 34(33–36) : 16(15–18) : 21(20–22) and in hind leg from the side, relative widths of femur, tibia and tarsomeres 1–3, 35(33–37) : 20(18–21) : 11(10–13) : 11(10–11) : 10(9–11); (N = 5).

Abdomen (Fig. 74): Yellowish (or reddish) brown; above and below with stiff black setae.

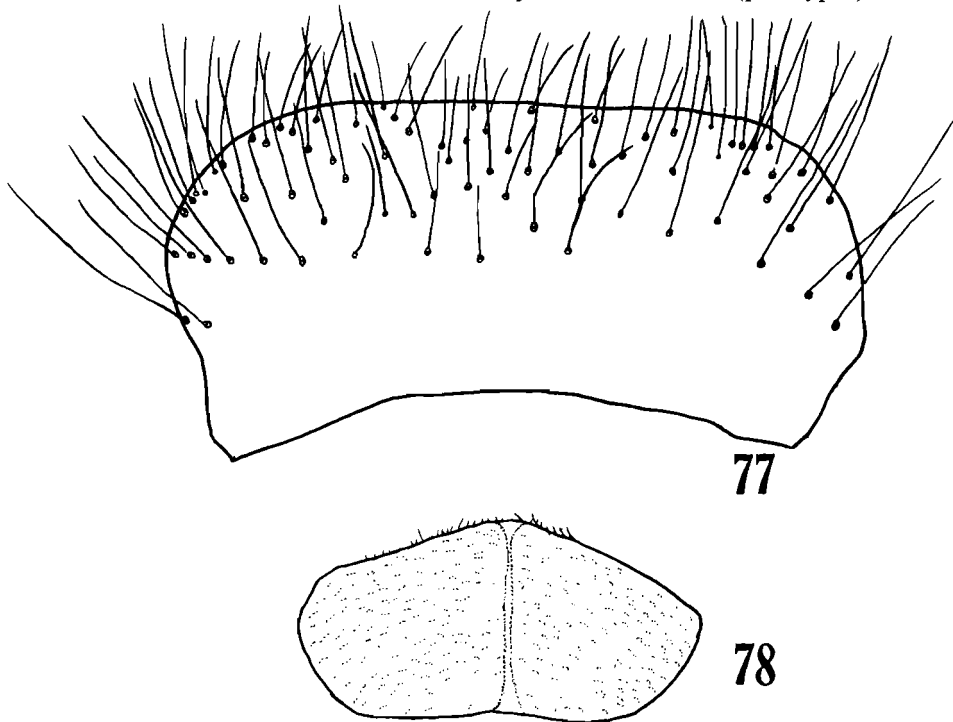
Genitalia (Figs 77–78): Very similar to *bevisi*, but may be separated from it in the following points: in ventral plate, transparent minute setose area larger than in *bevisi*; sternum 9 larger, wider, and more rounded posteriorly; tergum 9 wider than in *bevisi*. The male genitalia of *mensaemontis* are almost identical with those of *crassitibia* but may possibly be separated from it by having the sternum 10 wider than in *crassitibia* and setose area on tergum 9 is more extensive. Specimens dissected: 2 ♂, Blinkwater stream, Kirstenbosch, Cape Peninsula, 24–26.ix.1959, B. & P. Stuckenberg.

Length: Body 4,9–6,2 mm; wing 5,5–6,7 mm; fore basitarsus 1,03–1,23 mm.

Female. See notes above.

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Cape Province*: 5 ♂ (paratypes), Blink-



Figs 77–78. *Atherimorpha mensaemontis*, male. 77, tergum 9, dorsal view; 78, sternum 10, ventral view.

water stream, Kirstenbosch, Cape Peninsula, 24–26.ix.1959, B. & P. Stuckenberg.

***Atherimorpha ornata* sp. n.**

Figs 79–86

This species is similar to *flavicorpus* but may easily be distinguished from it as shown in the key (couplet 6).

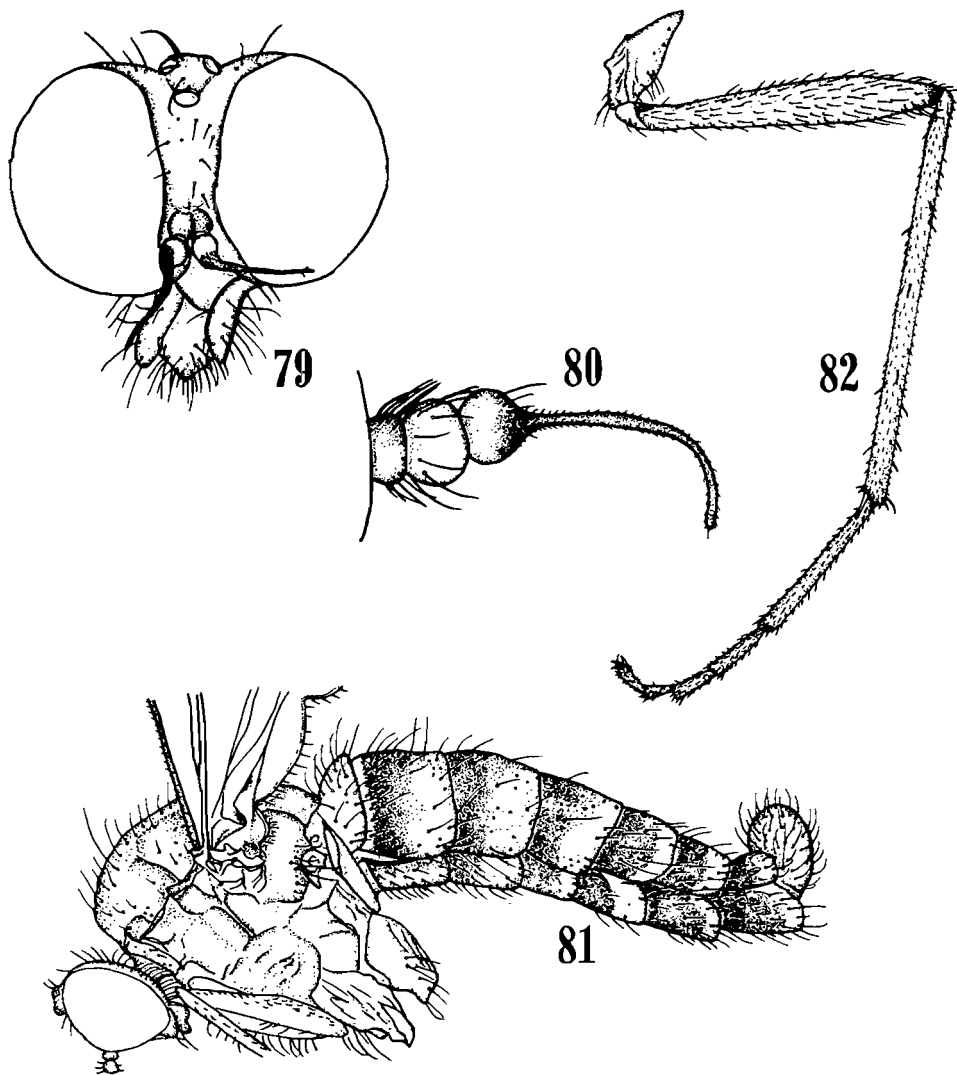
Male: Thorax, abdomen, legs, palpus, proboscis, antennal segment 2 and halter yellowish brown; tarsi and anterior portions of abdominal terga 2–7 darker; abdomen pale pilose; front narrow, at median ocellus 1,1–1,5 times as wide as ocellar triangle; antennal style is thin and its segmentation is absent or indistinct; genitalia large in proportion to segment 7 and well exposed.

Female (antennal style lacking) similar to male, except for the width of front at median ocellus which is c. 1,7 times width of ocellar triangle.

Male. Head (Figs 79–81): Dark brown, and pale gray pollinose; antennal segment 2 and basal portion of segment 3, palpus and proboscis yellowish brown; front, ocellar triangle, vertex, upper occiput, antennal segments 1–2, and dorsal part of segment 3 with black setae; occiput (except upper part), cheek and proboscis with pale pile; setae on palpus either chiefly black or chiefly pale; setae on front sparse and sometimes pale in colour; width of one eye at greatest point from a direct frontal view 1,3–1,5 times distance from antenna to median ocellus, 1,2–1,4 times width of face at lowest portion from a direct frontal view, and 2,0–2,6 times width of front just above antenna; width of front at median ocellus 1,0–1,3 times that just above antenna, 1,2–1,6 times that at narrowest point, and 1,1–1,5 times width of ocellar triangle; ocellar triangle 1,0–1,2 times as wide as long; space between antennae 0,07–0,17 times width of ocellar triangle; distance from antenna to ventral base of palpus 1,3–1,6 times that from antenna to median ocellus, which is 1,8–2,5 times length of ocellar triangle; clypeus 3–4 times as wide as parafacials; antenna 2,0–2,2 times as long as distance from antenna to median ocellus ($N = 3$); relative lengths of antennal segments 1, 2, 3 and style (along mid inner surface) 78(67–100) : 100 : 155(133–160) : 600 (600) and their relative thicknesses (excepting style) 127(100–160) : 149 (133–160) : 120(100–140) ($N = 8$ in segments 1–3 and $N = 3$ in style); antennal style, whose segmentation is absent or indistinct, 1,7 times as long as antennal segments 1–3 ($N = 3$); palpus 0,8–0,9 times as long as distance from antenna to ventral base of palpus; data based on 10 specimens.

Thorax: Yellowish brown to brown, and mesonotum except sides may be darker; mesonotum with 3 narrow darker stripes; thorax pale gray pollinose; mesonotum and scutellum with black setae; propleuron with pale pile; lower part of sternopleura may have some black setae; setae on metapleura either black or pale; metapleural pile 1/2 or more major axis of metapleuron in length of row.

Wing: Membrane brown fumose and grayish; stigma not distinctly marked; A 2,1–2,8 times as long as B, which is 0,9–1,0 times as long as C; E 0,8–1,1 times



Figs 79–82. *Atherimorpha ornata*, male. 79, Head, direct frontal view; 80, antenna, outer view; 81, lateral view; 82, hind leg, anterior view.

as long as C and 3,1–4,1 times as long as D; F 0–0,15 times as long as D or petiole of anal cell 0,1–0,2 times as long as D; Y 0,4–0,5 times as long as X and 1,0–1,3 times as long as Z; major axis of axillary 3,3–3,7 times as long as its minor axis; halter yellowish brown; data based on 10 specimens.

Legs (Fig. 82): Yellowish brown; tarsi more or less darker; coxae pale gray polinose and with setae which are either chiefly black or chiefly pale; femora with shorter recumbent, chiefly black setae; tibial black setae short; relative lengths of segments (excluding coxa and trochanter) of fore leg 122(116–119) : 190(184–197) : 100 : 46(45–49) : 36(32–41) : 20(16–22) : 19(16–21), of mid leg 127(119–132) :

216(205–223) : 101(97–110) : 38(33–41) : 24(21–27) : 13(12–14) : 16(14–18), of hind leg 170 (163–179) : 255(245–270) : 103(95–109) : 41(37–44) : 27(26–29) : 15(13–16) : 17(15–19) and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 24(21–26) : 15(14–16) : 11(9–14) : 9(7–10) : 8(7–9); (N = 10).

Abdomen (Fig. 81): Yellowish brown; terga 2–7, except posterior portions, darker (sterna 2–7 may be so in better preserved specimens); abdomen clothed with pale setae; genitalia with black setae.

Genitalia (Figs 83–86): Gonostylus rather rectangular with inner apex bluntly pointed, with basal portion somewhat widened, and with sparse and minute setae; paired gonocoxites somewhat wider than long; ventral surface of each gonocoxite long and wide, not tapering apically but roughly parallel-sided, and with posterior margin having U-shaped concavity near inner apex; gonocoxite with strong setae which are absent on dorsal inner part (except apical portion); dorsal plate gradually tapering apically, long and extending beyond apex of gonocoxite, with apical margin rounded and basal margin U-shaped; ventral plate consists of a pair of long tubes each of which is widest beyond middle and then tapering apically, pointed, and ending before apex of dorsal plate; this tube is fused with dorsal plate near ventral base of the latter; anterior bar of aedeagus stick-like and tapering and pointed apically (= anteriorly); endophallic sclerite is small and appears to be halter-like; gonocoxal apodeme short; sternum 9 small, not bulging out, semicircular, wider than long, and about as wide as gonocoxite; tergum 9 concave both at anterior and posterior margins, with apical outer apex protruded to some degree; each cercus is small, much shorter than tergum 9, may be not longer than wide, and may be rounded apically; sternum 10 much longer than wide, widest behind middle and narrowed both anteriorly and posteriorly. Specimens dissected: 2 ♂, Mariepskop, TVL., 2430DB c. 1,500 m, 8.iv.1964, E. H.

Length: Body 3,8–5,0 mm; wing 4,6–5,9 mm; fore basitarsus 0,83–1,08 mm.

Female. Similar to male except as follows: Head (antennal style lacking): Setae on front, ocellar triangle, vertex and upper occiput sometimes pale; width of front at median ocellus 1,7 times width of ocellar triangle (N = 2); in 1 specimen measured, width of one eye at greatest point 1,8 times width of front just above antenna; relative lengths of antennal segments 1, 2, 3 and style 66 : 100 : 117 ; ? and their relative thicknesses 117 : 133 : 117 : ?.

Thorax: Sometimes setae on scutellum pale and those on mesonotum partly so.

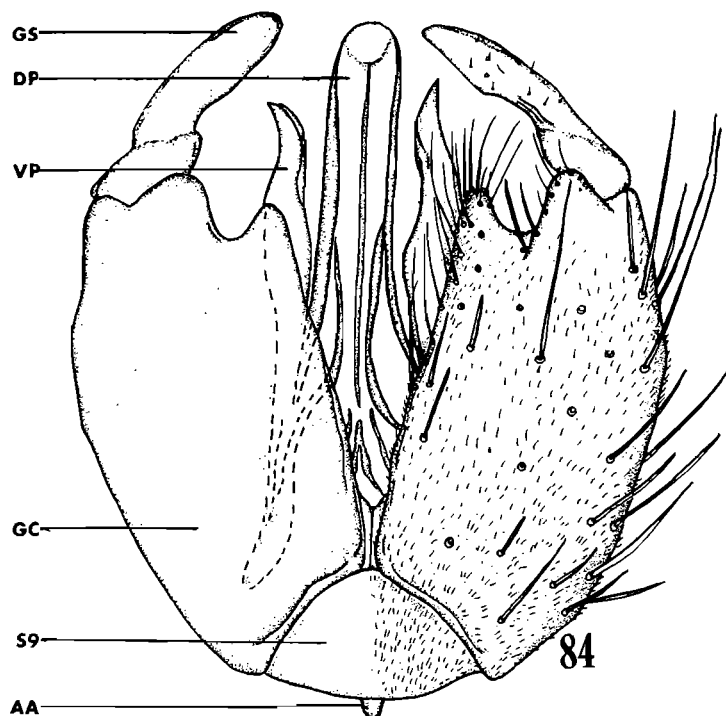
Wing: In 2 specimens measured, A 2,3 times as long as B, which is 0,9 times as long as C; E 0,8–0,9 times as long as C and 3,1–3,2 times as long as D; F closed at wing margin; Y 0,4–0,5 times as long as X and 1,0–1,1 times as long as Z; major axis of axillary 3,4–3,5 times as long as its minor axis.

Legs and abdomen: As in the male.

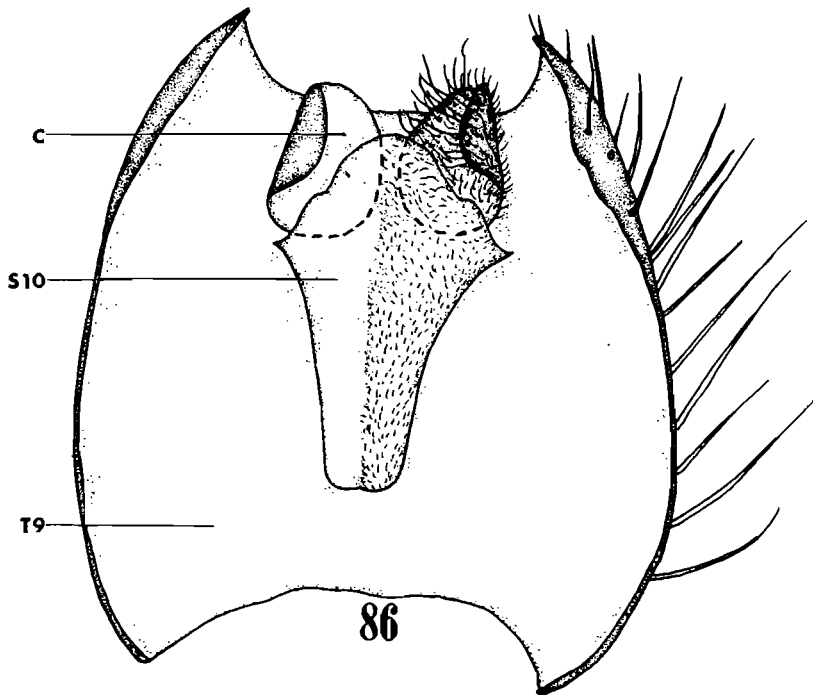
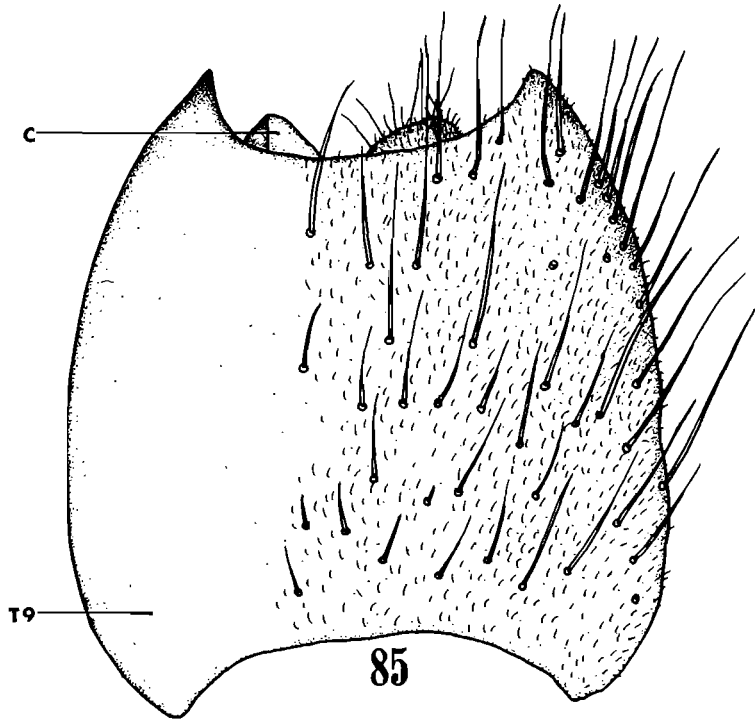
Length: Body 3,9–4,1 mm; wing 4,5 mm.

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Transvaal*: Holotype ♂, Mariepskop, Tvl., 2430DB, c. 1,500 m, 8.iv.1964, E.H.; Paratypes: 21 ♂ 2 ♀, same data as



Figs 83–84. Male genitalia of *Atherimorpha ornata*, dorsal and ventral views.



Figs 85–86. Male tergum 9, sternum 10 and cerci of *Atherimorpha ornata*, dorsal and ventral views.

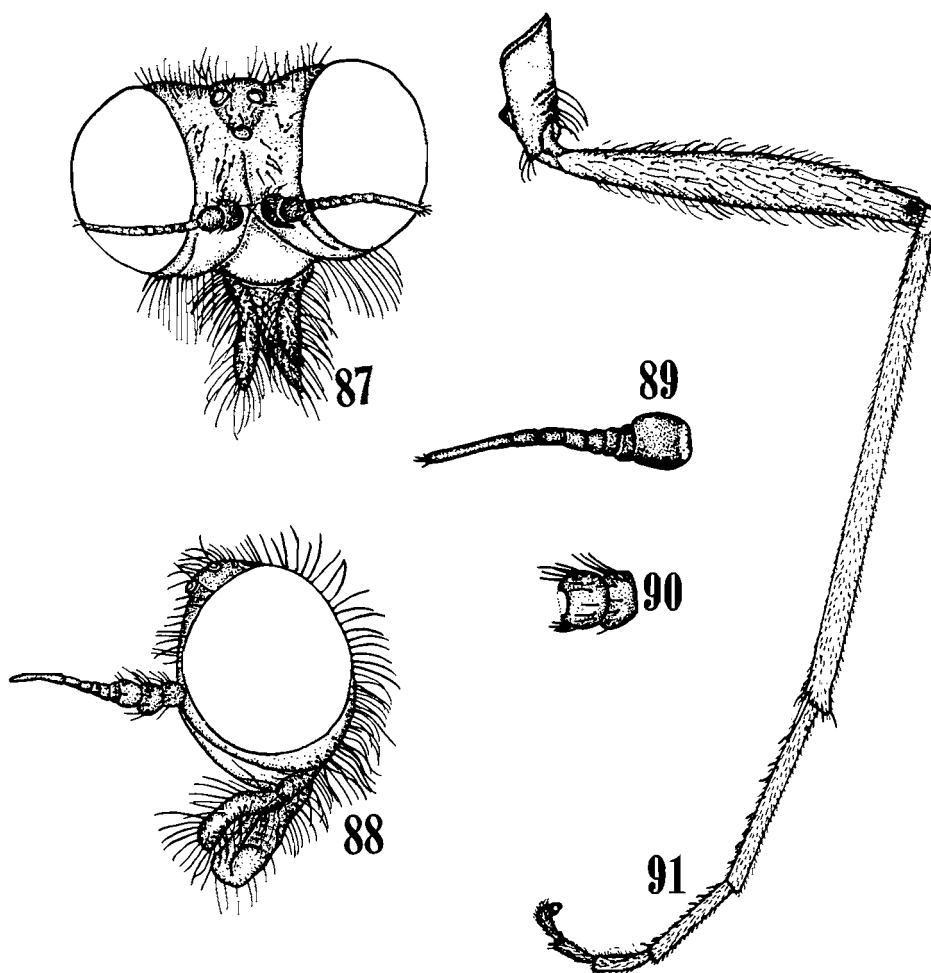
holotype. Holotype and paratypes are deposited in Natal Museum, Pietermaritzburg, South Africa. Some paratypes are retained in Kagoshima University, Kagoshima, Japan.

***Atherimorpha stuckenbergi* sp. n.**

Figs 87–91

This species is similar to *bevisi* but may easily be separated from it as shown in the key (couplet 10).

Male: Dark brown to black, but halter, femora and tibiae yellowish brown to brown; abdomen pale pilose; front at median ocellus c. 2,1 times width of ocellar triangle; face wide.



Figs 87–91. *Atherimorpha stuckenbergi*, male. 87–88, Head, direct front view and lateral view; 89, antennal segment 3 and style, outer view; 90, antennal segments 1–2, outer view; 91, hind leg, anterior view.

Head (Figs 87–90): Dark brown to black, and pale gray pollinose; front with two pairs of clusters of black setae, of which one pair is situated opposite ocellar triangle; ocellar triangle, vertex, upper occiput and antennal segments 1–2 with black setae; lower occiput, cheek, palpus and proboscis with pale pile which is intermixed with black setae on palpus; width of one eye at greatest point from a direct frontal view 1,8 times distance from antenna to median ocellus, 0,7 times width of face at lowest portion from a direct frontal view, and 1,1 times width of front just above antenna; width of front at median ocellus equal to that just above antenna, 1,1 times that at narrowest point, and 2,1 times width of ocellar triangle; ocellar triangle 1,1 times as wide as long; space between antennae 0,4 times width of ocellar triangle; distance from antenna to ventral base of palpus 2,0 times that from antenna to median ocellus, which is 1,4 times length of ocellar triangle; clypeus 2,2 times as wide as parafacials; antenna 3,0 times as long as distance from antenna to median ocellus; relative lengths of antennal segments 1, 2, 3 and style (along mid inner surface) 75 : 100 : 125 : 525 and their relative thicknesses 125 : 125 : 125 : 75; antennal style 7-segmented and 1,8 times as long as antennal segments 1–3; last segment of antennal style 0,4 times as long as antennal style; palpus as long as distance from antenna to ventral base of palpus.

Thorax: Dark brown to black, and pale gray pollinose; mesonotum has 3 narrow darker stripes and may be darkened before and behind suture; mesonotum and scutellum with pale pile which is intermixed with some black setae on the former; pro- and metapleura with pale pile; metapleural pile about 1/2 major axis of metapleuron in length of row.

Wing: Membrane tinged with yellowish brown to brown; stigma more or less darker and ending beyond apex of vein R_1 ; veins brown to dark brown; A 1,3 times as long as B, which is 1,3 times as long as C; E as long as C and 3,5 times as long as D; F 0,2 times as long as D; Y 0,4 times as long as X and 1,1 times as long as Z; major axis of axillary 3,5 times as long as its minor axis; halter yellowish brown.

Legs (Fig. 91): Coxae and trochanters dark brown to black, and pale gray pollinose; femora and tibiae yellowish brown to brown; tarsi darkened; coxae pale erect pilose; fore and mid femora short recumbent chiefly or partly black setose; tibial black setae short; relative lengths of segments (excluding coxa and trochanter) of fore leg 138 : 195 : 100 : 48 : 38 : 20 : 23, of mid leg 160 : 233 : 103 : 50 : 33 : 15 : 20, of hind leg 223 : 320 : 120 : 60 : 43 : 23 : 25 and in hind leg from the side, relative widths of femur, tibia, and tarsomeres 1–3, 30 : 18 : 13 : 10 : 10.

Abdomen: Dark brown to black, and pale gray pollinose; above and below with pale pile which is longer on dorsum.

Length: Body 6,2 mm; wing 5,9 mm; fore basitarsus 1,0 mm.

Female. Unknown.

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Cape Province*: Holotype ♂, Port Elizabeth, Walmer, E. Cape Prov., 8.vii.1961, B. and P. Stuckenberg. Deposited in Natal Museum, Pietermaritzburg, South Africa.

Atherimorpha sp. A

Atherimorpha sp., Stuckenberg, 1956a: 146. Locality: South Africa (Western Cape Province).

We have seen 1 ♂ which Stuckenberg (1956a) had examined and had described. In this specimen, one eye and abdomen are broken off.

This specimen runs to the upper branch (*bevisi*) of couplet 10 in the key to species of the present paper, although vein R_5 originates beyond apex of discal cell.

As pointed out by Stuckenberg (1956a), this species may differ from *bevisi* in the following points: Antennal style thinner than in *bevisi*; setae on coxae black (in *bevisi*, pale or white); anal cell closed at wing margin (in *bevisi*, open).

'Length approximately 6.25 mm, wing 6 mm.'

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Cape Province*: 1 ♂, River Zonder End, altitude 5 300 ft., R. Tucker.

Atherimorpha sp. B

Atherimorpha sp. Stuckenberg 1961: 119. Locality: South Africa (Port St. Johns).

This species (♀) is very similar to *mensaemontis* 'but may differ in having weaker, paler setae, and in various features of coloration' (Stuckenberg 1961).

Distribution: South Africa (Port St. Johns).

Stuckenberg (1961) examined 2 ♀, September 1923, R. E. Turner (British Museum 1923-510).

Atherimorpha sp. C

Atherimorpha sp. Stuckenberg, 1961: 119. Locality: South Africa (Ulundi).

This species is a 'typical member of the species group including *albipennis* Bezzi, *bevisi* Stuckenberg and *latipennis* Stuckenberg, and in some respects resembles the last-named species' (Stuckenberg 1961).

Distribution: South Africa (Ulundi).

Stuckenberg (1961) examined the headless 1 ♂, September 1896 (? Natal Drakensberg), G. A. K. Marshall (British Museum 1903-17).

Atherimorpha sp. D

Atherimorpha sp. Stuckenberg, 1961: 120. Locality: South Africa (Eshowe, Zululand).

'A small species with the eyes separated by a narrow, rectangular frons, 3rd antennal segment small, style whip-like and apparently unsegmented. Male genitalia very peculiar; lower distal edge of basistyle produced into an irregular lobe extending inward and backward (rather like that found in some species of *Lampromyia*), these lobes arising below insertion of dististyles which are largely covered ventrally by them. Dististyles slender, finger-like. Aedeagus a strong, tapering tube directed obliquely upward; on its lower surface, a short distance from the apex, is a pair of pendant, short, horn-like appendages.'

Distribution: South Africa (Eshowe, Zululand).

Stuckenberg examined 1 ♂, 6–31 May, 1926, R. E. Turner (British Museum 1926–232).

Note: *A. gracilipennis* sp. n. is described on 1 ♀ collected from Eshowe.

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